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THE JOURNAL OF LAND & PUBLIC UTILITY ECONOMICS

CONTROL OF INTERSTATE TRANSMISSION OF ELECTRICITY
F. G. CRAWFORD

COUNTRY BANKING COSTS AND INTEREST RATES
VIRGIL P. LEE

COMPETITION AND ELECTRIC RATES
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COST OF REGIONAL PLANNING
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LABOR RELATIONS OF PUBLIC UTILITIES
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KENNETH FIELD

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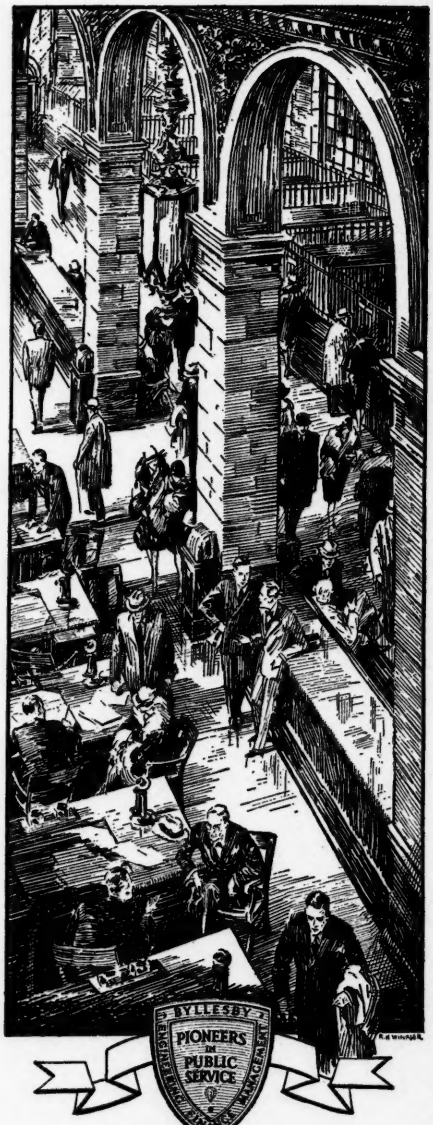

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CONTROL OF INTERSTATE TRANSMISSION OF ELECTRICITY

By F. G. CRAWFORD

INTERSTATE transmission of electrical energy is one of the problems which confront those interested in the future of public control of power in this country. The practice of interconnections by means of high tension transmission lines has become so important both within the boundaries of a single state and across state lines that it has developed new problems of the greatest importance. The organizers of the holding company saw the possibility of interconnection and out of this grew the legal questions involved in the transportation of electricity across a state boundary.

The need of such regulation is by no means hypothetical, as will appear from the following illustration. In 1922 North Carolina suffered from a drought which decreased the supply of electricity so materially that street cars could not run and homes were in darkness. In Georgia there was no power to spare. The same was true of Alabama, but at Muscle Shoals power was available by using the steam plant of the national government. The Alabama Power Company relayed its power to Georgia. Georgia relayed its power to North Carolina, while Alabama was supplied by the Muscle Shoals steam plant. A catastrophe was averted. This shows the possibility of a complete hook-up so that the available resources of one area may be used in another.[1]

A somewhat similar situation existed in the northeastern states five years ago when an investigation was made by a special conference called for the purpose of outlining a program for better state and federal cooperation.[2] The area under consideration covered the states of Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, Pennsylvania, New Jersey, Delaware and Maryland and the District of Columbia. This area, which

[1] It is reported that interconnecting systems make it possible now to relay power from the Atlantic seaboard to the Mississippi River.

[2] The Secretary of Commerce and the chairmen of 11 public utility commissions and representatives of the Federal government participated in the conference.

has 40% of the country's population, consumed 50% of the kilowatt hours in 1923 and produced and operated 70% of the primary power of the country.

It was reported that in the 11 states nearly 200 utility companies were engaged in power production and distribution with many of them under common ownership. Of these 45% were actually interconnected but only 8% of the interconnections had a capacity sufficient for effective interchange of power. Thus it appeared five years ago that the principle of interconnection applied to nearly half the above area. It may be reasonably assumed that in the last five years such interconnections have steadily increased. The committee of the conference expressed the opinion that early and effective interconnection of the utility systems would result in great economies in cost of production. The economies effected would comprise:

a. Reduction of the amount of reserve equipment;
b. Better average load factor through pooling of daily and seasonal load variation and wide diversification of use through increased industrial consumption;
c. More security in power supply against interruption by strikes, storms, failure of transportation and equipment;
d. Available water power could be much more advantageously used;
e. Interconnection would make use of secondary water power;
f. Power would be available to meet growing demands.

Interconnections of this character will become the more imperative when those great reservoirs of power, Muscle Shoals, Boulder Dam, Columbia and St. Lawrence Rivers, have once begun to produce electrical energy. The best and most economical utilization of this output will undoubtedly entail interstate transmission.

A study prepared by the Bureau of Business Research of Harvard University in 1926 showed that 9.06% of the total power generated in the United States was transported in interstate commerce. When this report is analyzed, it shows that 12 states export between 10 and 20% of the power generated within their borders, five between 20 and 50%, and one (Idaho) exports 63% and one (Vermont) 92%. When the figures of importations are examined, the report shows that eight import from 10 to 20%, four from 20 to 30%, while Maryland imports 74.7%, Mississippi, 98.1% and three states import over 100% of the power they themselves generate. This means that over half of the power used within their borders is imported. As a result of this analysis the figure of 9.06% does not truly describe the situation. The problem in these states mentioned is so important that a nation-wide average fails to indicate the true picture. The data in regard to interstate power lines are also significant. In 1926, 453 interstate power lines were in operation. Of these, 152, or 33.6%, were placed in operation during 1924, 1925 and 1926. Unfortunately this study has not been brought down to date. The best informed men in the field believe that interstate transmission has continued to increase at a rapid rate.

Interstate transmission occurs under two circumstances. It may consist of the transmission and sale of energy produced in one state and furnished directly to consumers in another state or it may consist of the transmission and sale in wholesale quantities to a distributing company in a second state. The first set of conditions is illustrated by *Pennsylvania Gas Company* v. *Public*

Service Commission of New York.[3] The Pennsylvania Gas Company transmitted natural gas from the source of supply in Pennsylvania to a city in New York where the Company sold at retail to local consumers. The court held that the New York Commission could regulate the rates because the commodity regulated was local in its nature although a part of an interstate transmission. The court further maintained that this local service did not require general and uniform regulation of rates by congressional action, even if the local rates might affect the interstate business of the Company. This case might be characterized as a situation where a company was engaged in a retail business across a state line. This same rule would undoubtedly be applied to electricity if a similar situation should arise.

The second set of conditions is illustrated by *Public Utilities Commission of Rhode Island* v. *Attleboro Steam and Electric Company*[4], known as the Attleboro case. The Narragansett Electric Lighting Company in Rhode Island sold electricity to the Attleboro Company in Massachusetts for distribution to consumers in Massachusetts. The Public Utilities Commission of Rhode Island ordered the Narragansett Company to increase its rates on electricity sold to the Attleboro Company. The court ruled in this case that neither the state from which the electricity was transmitted nor the state into which the electricity was transmitted has any jurisdiction over the rate charged. This was a federal matter and would remain unregulated until the Federal government had acted. This case may be characterized as one which involved the wholesaling of electricity. This type of business remains, therefore, wholly unregulated except with regard to the licensees of the Federal Power Commission.

What then are the possibilities for regulation of the wholesaling of electricity? A number of plans have been proposed which merit discussion.

I. Compact Method

The Constitution provides that no state shall, without the consent of Congress, enter into any agreement or compact with another state or with a foreign power. It is extremely doubtful whether Congress could delegate to a group of states its exclusive jurisdiction over interstate commerce, through the approval of a compact which would have for its object the control of rates on wholesale sales of electricity to or from the states involved. Not only are constitutional questions an objection to the compact method of control but the jealousies of the states as well are a stumbling block. A proposed compact between New York, New Jersey and Pennsylvania in regard to power development failed to secure the approval of the New York delegates because of the fear that New York power might get outside the state. State jealousies were one of the major difficulties in the passage of the Boulder Dam project. The compact may well be discarded as a possible solution.

II. State Regulation

A second proposal is that the problem of interstate transmission might be solved by granting to state commissions the right to regulate rates where the transmission is of the Attleboro case type. Three possibilities exist.

a. Congress may pass a law which would invest in the state commissions of the two states involved joint author-

[3] 252 U. S. 23 (1920).
[4] 273 U. S. 83 (1927).

ity to make the administrative rulings necessary to the case. Such a provision would raise the question of constitutionality. Can Congress grant to the state commissions an exclusive federal power? No categorical answer can be made. There are no precedents. In the Wabash Case[5] the court declined to allow the states to control interstate railroad rates even when Congress had not acted. In naturalization the state courts act as agents of the Bureau of Naturalization. In prohibition the Eighteenth Amendment grants concurrent jurisdiction. The draft boards during the war were voluntary and patriotic organizations. The same was true of the fuel administrators, as well as the State Councils of National Defense.

b. A second possibility is found in the report of the executive secretary of the Federal Power Commission for 1928. His proposal is as follows:

"While the Commission has no definite recommendation to make at this time it has been suggested that this dilemma might be avoided by adopting a procedure similar to that provided in the Federal Water Power Act—that is, by conferring upon the states plenary jurisdiction to act individually in cases of the Pennsylvania Gas Company class and original jurisdiction to act jointly in cases of the Attleboro class, and by conferring upon some federal agency jurisdiction to review on appeal the findings of state agencies in the latter class of cases. State agencies, more familiar with local conditions than any federal agency is likely to be, could hold hearings, take testimony, assemble evidence and determine the issues. The federal agency, having only appellate jurisdiction, would render its decisions upon the record presented without the necessity of taking new testimony or admitting new evidence. A procedure of this character would leave the final authority in cases involving more than one State where it properly belongs, in the hands of the federal government; would give to individual states the right to settle their own local problems; would give to two or more states the opportunity of adjusting their own differences; and would avoid the necessity of overloading federal agencies with details or with matters that the states had better decide for themselves."

The proposals to grant to the state plenary jurisdiction in cases like the Pennsylvania Gas Company is unnecessary. This power is now being exercised as a result of the court decision. The second part of the plan is more formidable and it seems impossible to distinguish between this and the compact plan proposed above. The essential difference is that the Federal Power Commission would become by law the first board of appeal and thus in a measure relieve the Supreme Court of litigation on utility disputes.

c. The third possibility would be to grant to the Federal Power Commission, or other federal agency, original jurisdiction in all cases of the Attleboro class but allow that body to use as agents the state commissions involved in any given dispute. This would be similar to the method of the Bureau of Naturalization. The plan might avoid some constitutional difficulties.

In all these plans one contingency is forgotten because of the constitutional complications. What will happen when the members of the two or more state commissions involved in an interstate case refuse to serve and refuse to enter into any cooperative arrangements? At that point these plans break down. The state commissions cannot be forced to act unless the removal power of a government be invoked. Since nearly half of the commissions are elective, even this remedy would not be available. Add to this the relative ineffectiveness of the state commissions and the confusion is even greater.

[5] *Wabash, St. Louis and Pacific Ry Co. v. Illinois*, 118 U. S. 557 (1886).

It would seem that the above proposals are half-hearted endeavors to solve a clear-cut issue. The Federal government can hardly avoid its responsibility to the states by such methods.

III. Federal Regulation

A third solution is that the Federal Power Commission should be given control over electric rates, service, financial methods, etc., whenever electricity is transported in interstate commerce.[6] This would extend its present control of rates to all interstate transmission as well as to its own licensees. In the first place, this extension of authority would require that the Commission be recreated. Its present ex-officio organization would have to be replaced by a permanent personnel. In the second place, a definite budget would be required to provide an adequate staff of accountants and engineers so that regulation could become effective. Electric transmission is a sectional rather than a national problem and it would be necessary to devise an administrative set-up to safeguard these sectional aspects. The scheme which could be followed would be the establishment of regional boards whenever they were necessary. At present a northeastern, a southeastern, a southwestern and a northwestern regional board are obviously required.

The Commission would have control over all power projects on navigable and interstate streams, in the forest reserves, or in connection with federal reclamation or irrigation projects. Sites wholly within the boundaries of a state would not come under its jurisdiction. Rates would come under its control only in connection with interstate transmission. The Commission would have power to set up uniform accounting systems for these projects under its direction, as well as for companies engaged in interstate transmission. The result of this control would have the effect of a material change in the work of the public service commissions. Companies engaged in both interstate and intrastate commerce would not have two accounting systems. One possible result might be that the commissions would adopt the Federal Power Commission's accounting system. In the same way the state commissions' practice in regard to stock issues and holding companies would be materially altered. The national Commission would be given power to control the acquisition of operating companies so that holding companies could not purchase these properties at inflated prices. In the same way service contracts with holding companies and charges for management should be under the jurisdiction of a national body. Finally, the Federal Power Commission could undertake the issuance of statistical and other material in regard to the development of the light and power companies. Expenditures by the holding companies for advertising and propaganda could be controlled. This would prevent certain of the abuses which have come to light in the Federal Trade Commission investigation.

Such a drastic yet necessary alteration of the authority of the Federal Power Commission could not be secured without a struggle. The fear of opposing concentrated private control by concentrated governmental control and the fear that the rights of the states might in some way be limited would form the basis of opposition. The power interests might also vigorously oppose it. However, the need is great and the ad-

[6] This applies only to the wholesale transactions as typified in the Attleboro case.

vantages to the consumers and the states are obvious.

Two questions can be raised in regard to national control and the Federal Power Commission. What will be the power of the states? Will the state commissions become as impotent in regard to electric light and power companies as they have with the railroads? The two are so unlike that this situation will not occur. The rates for electricity are fixed for industrial and domestic uses and this power will remain in the hands of the state commissions. The national body will fix only interstate wholesale rates. This will have a direct effect on state rates but only in case they are unreasonably high.

A holding company which sells power to a distributing company across a state line will then have the rates on that power fixed by national authority on the basis of a reasonable and prudent investment. Since holding companies at present actually enjoy a considerable monopoly in most cases, they are able to charge rates which may include a profit far and above a legitimate return on the investment and operation costs. If competition existed, no danger would be present, but the distributing concern has usually no option other than to buy from the holding company. Frequently it is connected with that holding company and the sale is between partners.

In the same way the Federal Power Commission might control the financing of the holding companies and thus prevent speculative pyramiding and other abuses which have come from the organization of holding companies.

National control of wholesale interstate shipments seems, therefore, the only feasible solution to that problem. As interstate shipments grow in importance, an inevitable development, and as centralized holding companies extend their control according to present tendencies, the urgency of some such treatment of the problem will become increasingly apparent. The most practicable solution seems, therefore, to involve empowering the Federal Power Commission to set rates for power transmitted across a state line and to supervise the methods of financing and control of holding companies engaged in interstate transactions.

COUNTRY BANKING COSTS AND INTEREST RATES CHARGED ON SHORT-TERM FARM LOANS

By VIRGIL P. LEE

PROBABLY the greatest problem in farm credit at present lies in the field of operating credit. The problem reveals itself largely in the comparatively high interest rates paid by farmers in many sections of the country. Interest rates on short-term farm loans in the South, in particular, are often high as compared to similar loans obtained by merchants and manufacturers. Also, interest rates on such loans are higher than is warranted by the general conditions in the money market. Furthermore, they are higher than is warranted by the risks involved.

It is rather generally assumed that farmers in the South and Southwest are properly required to pay high rates because of the excessive risks involved in loans to "one-crop" farmers. Also, scarcity of funds in relation to the demand has been greatly emphasized. While these theories might have been tenable during the latter part of the last century, they need a thorough revision for present conditions. Risks on farm loans have been reduced and funds are more plentiful. Improved farming methods and an improved national system of commercial banking through the establishment of the federal reserve banks seem to have had little effect in reducing the cost of loans to farmers. Ten per cent. is still common among Texas country banks and merchant credit costs about twice as much. Although the most unsatisfactory phase of the short-term credit situation is undoubtedly the merchant credit system which prevails in many sections of the country, the present study is restricted to bank credit.

In studying the causes of these high rates to farmers, an analysis was made of the costs of operation of country national banks in 13 widely distributed states for the period from 1914 to 1926, inclusive. Why have customary interest rates of country banks remained high in certain localities despite decreased risks on loans and a more plentiful supply of loanable funds? The results of this analysis lead to the conclusion that country banks adhering to high customary interest rates have absorbed the advantages of reduced risks and more plentiful funds in higher costs of operation, instead of extending these advantages to borrowers through reduced rates.

This study is based on the Comptroller of the Currency's Annual Reports of expenses and losses of country national banks of 13 states: Arizona, California, Illinois, Iowa, Kansas, Mississippi, Montana, New Hampshire, New York, North Carolina, North Dakota, Texas, and Washington. The period from 1914 to 1926 includes a period of prosperity and a period of depression, and it ends with a time of recovery.

According to the Division of Farm Finance, Bureau of Agricultural Economics, the average interest rates paid by farmers at the country banks in these states in 1923 ranged from 6.0% in New Hampshire and New York to 9.8% in Montana and North Dakota (Table I). The average total costs (which include salaries and wages, interest on deposits, interest on borrowed money, taxes,

TABLE I.—AVERAGE EXPENSES AND LOSSES OF COUNTRY NATIONAL BANKS IN THIRTEEN SELECTED STATES, 1914–1926*

State	Expense per Dollar of Loans and Investments (in Cents)	Losses† per Dollar of Loans and Investments (in Cents)	Total Cost per Dollar of Loans and Investments (in Cents)	Rate Charged Farmers in 1923
Arizona	7.24	1.76	9.00	9.4%
California	5.05	0.83	5.88	7.7
Illinois	4.47	0.61	5.08	6.7
Iowa	5.74	0.87	6.61	7.6
Kansas	5.82	0.89	6.71	8.2
Mississippi	5.68	0.80	6.48	8.0
Montana	7.42	1.30	8.72	9.8
New Hampshire	4.04	0.67‡	4.71	6.0
New York	4.30	0.65	4.95	6.0
North Carolina	5.07	0.42	5.49	6.2
North Dakota	7.31	0.77	8.08	9.8
Texas	5.98	1.50	7.48	9.7
Washington	5.66	1.05	6.71	8.4

* Data on costs not given in 1920.
† Recoveries on losses charged off not deducted for 1914, 1915, and 1916.
‡ Losses for 1914–1916 averaged 1.36; for 1917–1919, 0.49; for 1921–1923, 0.63; for 1924–1926, only 0.46.

other expenses, and losses) per dollar of loans and investments, or earning assets, varied in about the same proportion as the rates charged on farm loans. Thus, the costs ranged from 4.7 cents per dollar of loans and investments in New Hampshire to 9.0 cents in Arizona (Chart I).

Emphasis is commonly placed upon the losses of banks in the western and southern states, but this study reveals a much greater variation in expenses of operation than in losses on loans. Losses varied from .42 cents per dollar of loans and investments in North Carolina to 1.76 cents in Arizona—a range of 1.34 cents; while expenses varied from 4.04 cents in New Hampshire to 7.42 in Montana—a range of 3.38 cents. When it is considered that this period covers one of the worst periods for losses in the history of country banking in the United States, it is clear that expenses of operation are of far greater importance in explaining high rates on loans than are losses (Table II and Chart II).

I. Explanation of High Costs

The high expenses per unit of business in most of the country banks of the South and West are caused largely by a small volume of business per bank and inefficiency of bank management. It might be expected that banks in these deficit capital areas would be over-burdened with expenses in the form of interest on funds borrowed from banks in the surplus areas. But the correlation between total expenses and interest paid for borrowed money from 1918 to 1926 was not marked. This item of expense ranged from .16 cents per dollar of loans and investments in New York and Illinois to .68 cents in North Carolina (Table II). Thus, at the maximum this item could account for only one-half of one per cent. interest on loans to farmers. An item of expense which varied greatly among these banks was the salaries and wages item which ranged from 1.04 cents per dollar of loans and investments in New York to 2.94 cents in Arizona—a range of almost two cents. The widest variation was found, however, in the item of interest on deposits. The range was from 1.25 cents in New Hampshire to 3.54 in North Dakota. This item ac-

counted for less of the variation in total costs, however, than did salaries and wages, since the banks in many of the low-cost states had comparatively heavy expenses for interest on deposits and many of the banks of the high-cost states had light expenses for interest on deposits.

If Arizona, California, Iowa, Kansas, Mississippi, Montana, North Dakota, Texas, and Washington are grouped as Southern and West Central States and Illinois, New Hampshire, New York, and North Carolina as Northern and East Central States, the difference in expenses per unit of business is readily seen. The average for the western group is 6.27 cents per dollar of loans and investments, while that for the eastern group is 4.63 cents. The difference is 1.64 cents. Approximately 3/5 of this difference is attributable to the difference in salaries and operating expenses other than interest and taxes, i. e., for salaries, supplies, and the maintenance of the place of business (Chart III).

One important factor in the variation of operating expenses is the volume of business over which expenses can be distributed. In all states except Arizona there was a fair degree of correlation between large volume of business and low expenses per unit of business. If the banks of the western and southern states are combined, the average volume of loans and investments per bank is $727,000, while the average for the banks of the northern and eastern states is $1,155,000. The average expenses per unit of business were 2.93 and 2.13 cents, respectively. Thus the average volume of business per bank was 60% greater in the North and East and the operating expense per unit of business was about 27% less than in the West and South (Chart IV).

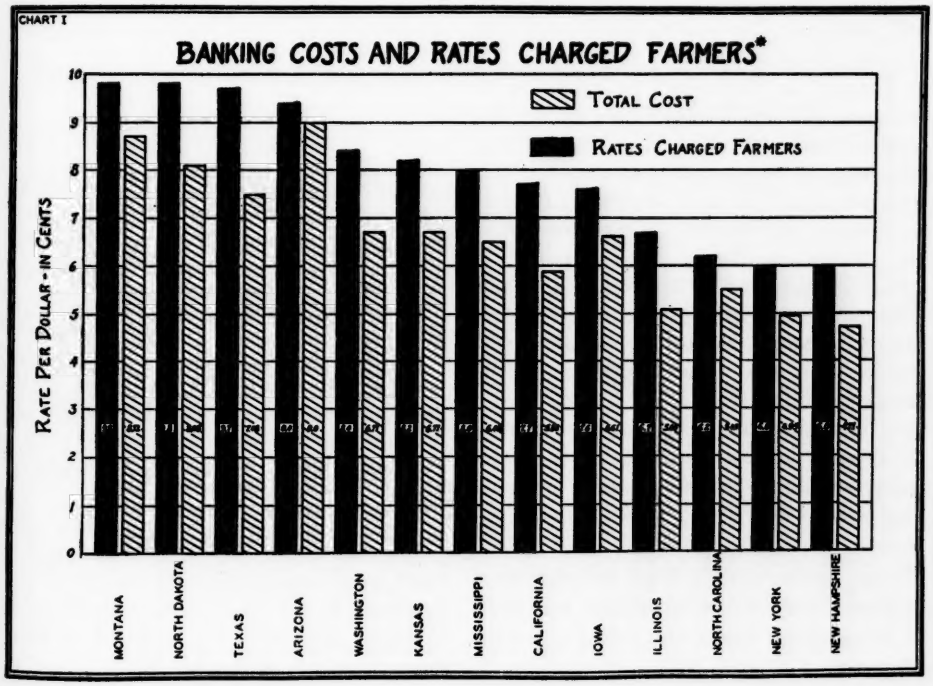


TABLE II. AVERAGE DISTRIBUTION OF EXPENSES OF COUNTRY NATIONAL BANKS, 1918–1919 AND 1921–1926

State	Average Expense per Dollar of Loans and Investments (in Cents)	Average for Salaries and Wages (in Cents)	Average for Interest on Borrowed Money (in Cents)	Average for Interest on Deposits (in Cents)	Average for Taxes (in Cents)	Average for Other Expenses (in Cents)
Arizona	7.60	2.94	.55	1.73	.72	1.66
California	5.13	1.88	.22	1.61	.39	1.03
Illinois	4.61	1.42	.16	1.77	.51	0.75
Iowa	5.96	1.52	.52	2.66	.45	0.81
Kansas	5.98	1.93	.23	2.02	.73	1.07
Mississippi	5.75	1.68	.44	1.78	.84	1.01
Montana	6.65	1.96	.46	2.48	.60	1.15
New Hampshire	4.28	1.39	.31	1.25	.31	1.02
New York	4.42	1.04	.16	2.29	.31	0.62
North Carolina	5.22	1.42	.68	1.86	.39	0.87
North Dakota	7.48	1.93	.43	3.54	.44	1.14
Texas	6.12	2.18	.49	1.50	.78	1.17
Washington	5.72	1.86	.22	2.00	.54	1.10

But of course it should not be assumed that a more adequate volume of business will entirely remedy the situation. Another important cause for the variation in operating expenses is the variation in efficiency of the management and the employees of the banks.

Interest on Deposits. In addition to salaries and wages and expenses for the maintenance of the place of business, the item of interest paid on deposits is a large share of the total expenses of banks in many of the states. In fact, for all the 13 states combined this expense is greater than that for salaries and wages. However, no high degree of correlation exists between the amount paid on deposits and the total expenses of the banks. Thus, New York banks have a low average total expense per unit of business, yet the amount paid on deposits was 2.29 cents per dollar of earning assets which is above the average for the 13 states. On the other hand, Texas banks have a high average total expense per unit of business and only 1.50 cents per dollar of earning assets for deposits.

To summarize this discussion on expenses, it may be said that high expenses of banking in the high-interest-rate sections of the country may be attributable to one or more of the following factors: (1) small volume of business; (2) inefficient bank management; and (3) excessive payments for deposits.

II. Causes of High Losses

While losses are far less significant in explaining the difference in total banking costs in the various sections of the country than are operating expenses, there is considerable variation in losses. Thus, the average loss per dollar of loans and investments in the northern and eastern states was .57 cents, while average loss among the banks of the southern and western states was 1.09, a difference of approximately one-half cent.

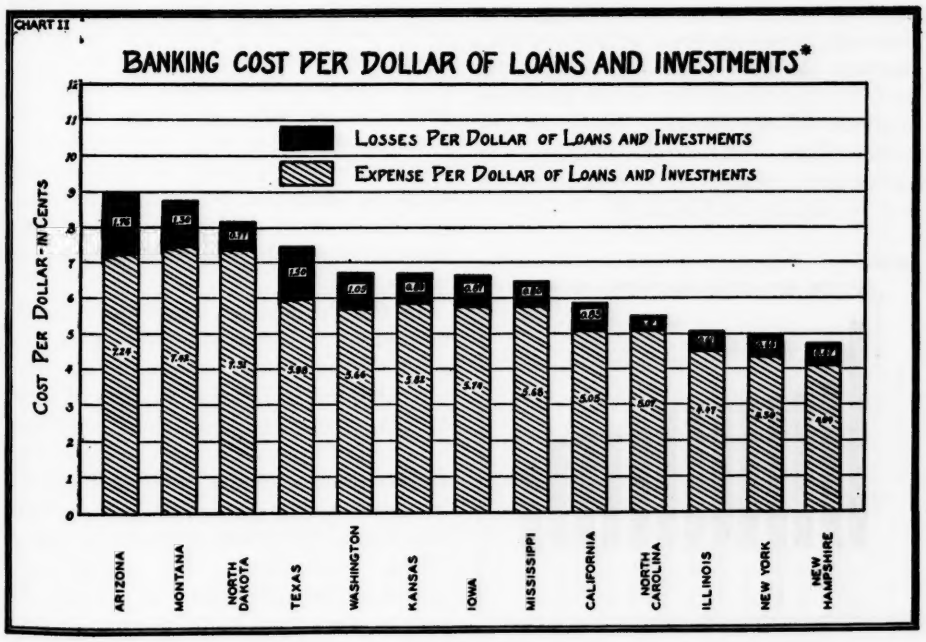
It is popularly assumed that the greater losses of southern and western banks are caused almost entirely by the uncertainty of industry and agriculture in these sections. As a matter of fact, three primary causes for losses in bank-

ing in these sections may be cited: (1) slack methods of lending because of poor credit analysis; (2) poor investments (bonds, etc.); and (3) uncertainty of income of the borrowers. The first two causes of losses are matters of banking efficiency. The available data indicate that a large share of the losses of country banks in the South and West is caused by inefficient methods of making loans and investments.

III. Relation of High Costs of Banking to High Interest Charges on Loans.

It has been pointed out that banks in the high-interest-rate sections of the country have high unit costs. Does it follow that high banking costs are the cause of high interest rates? This would be equivalent to saying that cost of production determines value. It seems more reasonable to say that high interest rates on loans are the indirect cause of high costs.

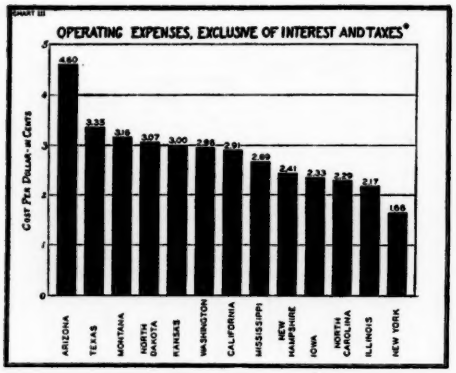
The ability of bankers in the South and West to command a high rate of interest on loans has been conducive to inefficient banking in the form of small banking units and inefficient business methods. Through well-established custom farmers in general in these sections have come to think of 10% as the proper rate of interest. It is obviously easy to maintain a rate which is generally accepted as satisfactory. This permits inefficient bankers to live and prosper. Add to this the unequal bargaining power of the banker and the borrower and the general failure of bankers to "cut" rates and it is not surprising that the old rates which might have been justified during two or three decades after the Civil War are still common in spite of the improvements in the banking system, the increased supply of funds, and the progress of agriculture in these sections.

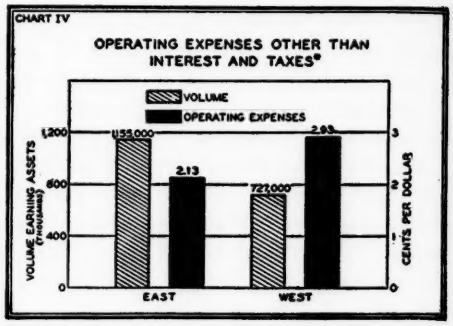


IV. Methods of Improving the Situation

From the point of view of the agricultural industry in many sections of the United States there are two major shortcomings of commercial banks: (1) they charge too much for credit, and (2) failures are too frequent. The astounding number of bank failures since 1920 has revealed many inadequacies of the small town banks.

The situation can be improved in many ways. In the first place, the state banking departments of many of the state governments should be given greater power in regulating the banking business, particularly in restricting the organization of new banks. The legislatures of many states have done something along this line since 1920. Letters from state banking commissioners all over the country indicate that they are determined to prevent over-banking of the country towns. Both the comptroller of the Currency and the state banking commissioners are making more thorough investigations before granting charters for new banks. The greatest need in this connection is for adequate analyses of the banking needs of the communities. Research divisions of agricultural colleges could well point the way in making such analyses.





In the second place, capital requirements for state and national banks should be revised. It is scarcely reasonable to assume that the $25,000 minimum requirement set for national banks in 1900 is still appropriate. On the basis of the change in the value of the dollar since that time, the minimum capital requirement should be doubled. This neglects consideration of the enormous development of agricultural communities during these three decades as another reason for increasing capital requirements. Thus many agricultural towns have two or three small banks which can thrive only if they can depend on a high rate of interest. It should be said also in this connection that the present population basis for determining the minimum capital is inadequate. Banking needs and the volume of banking business in agricultural towns are not determined by the population of the towns.

In the third place, usury laws should be revised and enforced. When we consider the bargaining power of the small town banker in relation to that of most of his customers and the recognized function of the government in regulating various phases of the banking business, it seems only logical that a maximum rate should be set and enforced by supervising authorities. The government would necessarily have to adjust the rate to the size of banking units in such

a way that, when efficiently managed, the restriction on rates would not be too burdensome. Moreover, the maximum should be set on a sliding scale so that higher rates could be charged on petty loans. Also, a larger maximum would probably be necessary in small communities which have insufficient business to maintain a bank on the ordinary charge. The maximum rates of the present usury laws should be revised according to changes in credit conditions which have occurred since the laws were passed.

It is possible that within a decade or two the Federal Intermediate Credit Banks may have some influence in reducing the rates charged by country banks, but at present their loans are restricted chiefly to cooperative marketing associations and to livestock loan companies. They have scarcely touched the local production credit situation.

Possibly also the present lack of efficiency in country banking will lead to systems of branch-banks. The possibilities of increased efficiency in country banking through chain banks seem comparable to those in the field of merchandising.

Inefficient banking which is made possible largely by high rates on loans has certain far-reaching influences upon the utilization of the resources of our agricultural communities. A prevailing rate of 10%, for instance, which is well-established by long usage and which is maintained in spite of the increase in the available funds of the community and an accessible rediscount market for the banker, are conducive to slovenly methods of credit analysis. The banker can employ a haphazard method of distributing his funds and still come out with a fair return on his stock. The result is that worthless farmers and submarginal land are often maintained at the expense of the community. The better farmers, on the other hand, are penalized not only by a high rate of interest on loans but also by maintaining a group of submarginal competitors.

COMPETITION AS A BASIS FOR ELECTRIC LIGHT AND POWER RATES

By HORACE M. GRAY

IN two recent articles dealing with various phases of public utility problems, particularly those of the electric light and power industry, Professor Philip Cabot of Harvard University points out what to him are certain glaring fallacies in our present system of public utility regulation.[1] These errors, through long application, have virtually nullified the original intent and purpose of regulation and have brought in their wake certain harmful social consequences. Unless we as a people see the errors of our ways, discard the economic fallacies of our present theory, and return to sound principles of regulation, still worse days are in store for us. The issues raised in these articles are of such general economic importance, the views of Professor Cabot so divergent from the commonly accepted thought on the subject, and his forebodings for the future so dismal that serious consideration should be given to the soundness of the economic premises upon which his analysis is based. Inasmuch as no comprehensive discussion of these issues has appeared to date, the present treatment will attempt to ascertain the validity of these premises.[2]

In brief, the economic bases of Professor Cabot's position, stated in relation to the electric light and power industry, may be summarized as follows:

1. Contrary to general belief, electricity is sold by public utilities under predominantly competitive conditions; the price, therefore, is a competitive one.
2. Consequently, any profits arising from the sale of electricity are competitive and, hence, justly earned profits—equally as just and fairly earned as those accruing in any other competitive business.

In the face of these economic facts:

1. The present regulatory system, erroneously predicated on the theory that profits in the electric light and power business are monopoly profits and hence unjust, tends, by basing prices on cost, to confiscate profits.

[1] "Ethics and Politics," 142 *Atlantic Monthly* 686-694 (November, 1928) and "Public Utility Rate Regulation," 7 *Harvard Business Review* 257-266 (April, 1929). The second of these articles is a restatement in more detail of the economic views expressed in the article in the *Atlantic Monthly*. A third article to be published shortly in the *Harvard Business Review* will deal with the method of applying Professor Cabot's proposed system for determining reasonable prices of public utility services. The present article thus deals with the material presented in the two above-mentioned papers. The fact that the writer has not had the opportunity to study Professor Cabot's final paper on method of application will not be of great significance because the intention is to deal only with his basic assumptions.

[2] Professor H. W. Peck, Syracuse University, in connection with a different phase of public utility problems, mentions certain features of the Cabot theory and gives his conditional approval (p. 215). "This policy seems the most constructive that has yet been made by the representatives of private operation." ("An Inductive Study of Publicly Owned and Operated versus Privately Owned but Regulated Electric Utilities," 19 *American Economic Review, Supplement*, 197-218 (March, 1929)).

Mr. Henry C. Spurr, on the other hand, dismisses the whole Cabot theory of rate regulation as of no consequence (p. 62). "It would only confuse the issue to discuss the academic question whether Professor Cabot's theory of price regulation or the one of which he complains as applied to public utilities, is supported by the better reason. . . . . Whether Professor Cabot is right or wrong about this is, however, beside the point." ("The State Commissions Are Corrupting Utility Officials—A Challenge and a Reply," 3 *Public Utilities Fortnightly* 61-67 (January 24, 1929)).

It is obvious to the informed student of public utility affairs that the last mentioned disposal of the question is an extremely superficial treatment.

2. Public utility managers, confronted by the threat of confiscation of their profits, tend to adopt certain devious accounting and managerial policies designed to conceal the true profits. They sin against society, not by reason of any inherent sinful propensity, but because they are driven to it in order to escape confiscation of property at the hands of the government.

In addition to encouraging managerial dishonesty, the present cost-of-service method of regulation results inevitably in other evils, such as overprotection of investors at the expense of consumers, managerial inefficiency and general stagnation of public utilities, aggravation of the evils of the business cycle, costly litigation, and harmful rigidity of rate structures.[3] The reason that these evil effects have not materialized to a greater extent during the last 30 years of the *Smyth* v. *Ames* doctrine lies in the fact that those in charge of regulation have winked at the cost theory and have actually permitted prices to be fixed by competition.[4] Only recently, however, these demoralizing consequences have become generally apparent, and with such force as to stimulate a sentiment for public ownership. Unless the present fallacious system of regulation, which is the source of all these evils, is replaced by a better one, government ownership will gain momentum until it has engulfed all utilities within its paralyzing grip.[5]

The suggested method by which we are to avoid this unwholesome situation is to cease regulating rates by regulating profits and to adopt instead a program of rate control based on the competitive method of price comparison. In his own words Professor Cabot's theory of price control is succinctly as follows:

"Each power company has a monopoly of the sale of its product in its local field, but, with the exception of the trivial part of it used for lighting, the product must be sold in competition not only with other power produced by the potential customers for their own use, but also with an almost infinite variety of substitutes . . . I repeat that electric power companies have very little monopoly power over price, and that price can and should be determined by the competitive method of price comparison. This can be done without direct competition."[6]

Thus the ultimate soundness of Professor Cabot's position depends on the correctness of his assumption that the electric light and power industry is a competitive one with respect to the determination of the price of its product. If this assumption is correct, then his subsequent deductions regarding the justness of profits, their inviolability against confiscation or limitation, and the fallacies of the present system are valid. If, on the contrary, this assumption is incorrect, then the proposal that prices be regulated by competition is an impossible, as well as an unwise, one because absence of competition would leave no competitive standard of comparison. Thus the question stands: Is or is not the electric light and power industry competitive with respect to the price-making process?

At the very outset it is apparent that in his analysis Professor Cabot has given a special meaning to the word competition. To him competition means two things: First, the existence, either actual or potential, of "power produced by the potential customers for their own use;" second, the existence of "an almost

[3] 7 *Harvard Business Review* 261-264.

[4] *Idem*, p. 261. "Controlling weight has really been given to competition while the value of the property used in providing the service has been merely a stalking horse."

[5] *Idem*, p. 261.

[6] 142 *Atlantic Monthly* 691-692. See also page 264 of the April number of the *Harvard Business Review* for a similar statement.

infinite variety of substitutes."[7] When either, or both, of these circumstances prevails, competition exists as a price-determining factor. His contention is that, with the exception of the "trivial part" of electricity used for lighting, these two conditions exist in the electric light and power industry.

Granting, for purposes of discussion, that these conditions obtain in this particular industry, the question now arises as to whether or not their existence constitutes an effective competitive force. With respect to the first, it is presumably true that most customers could, if they had to, produce electric power for their own use. The unit cost of electricity, however, under such a system of production might be very great—probably much in excess of unit costs of electricity produced under modern large-scale, central-station methods. The opportunity to secure the economies of large-scale production is open to relatively few consumers, such as large municipalities and industrial establishments which have a heavy as well as a steady demand. This class of consumers can produce electricity which in point of reliability of service and low unit cost compares favorably with that produced by modern public utility companies. The relatively small consumer, however, cannot, in keeping with his own economic interest, afford to supply his own power requirements at high cost so long as he can purchase energy from a public utility company at a price slightly below his own cost of production. The most common exception to this general rule occurs in those cases where even relatively small consumers may produce electricity as a by-product of some heating process or where exhaust steam from an electric plant is used in certain industrial enterprises. In such cases the comparatively high cost of electricity may be reduced by being credited, perhaps arbitrarily, with a portion of the benefits derived from the main process of which the electricity is a by-product. While the number of such cases is still considerable, there is reason to believe that their importance as a competitive factor is declining. Neither in total number nor in percentage of total output of electricity are these instances of sufficient weight to serve as the basis for a general conclusion that the industry as a whole is a competitive one.

Under ordinary conditions, then, the cost differential between large-scale and small-scale production is so great that the consumer whose only alternative to purchasing energy from a public utility company is to supply his own needs by small-scale methods is definitely restricted in bargaining power. His disadvantage in this connection is accentuated if he finds himself in a situation where it is essential that the service possess a high degree of reliability. In order to secure his patronage the utility company need make a price only slightly below the unit cost of production of electricity of equal reliability under the alternative small-scale method. In the absence of regulation the actual, as compared with the maximum, price will be

[7] See quotation above. Also at page 258, *Harvard Business Review*, "Today the manufacturer who wants to buy electric power to run his mill can and does produce his own power if the power company's price is excessive, and the man who wants to heat his house can do it with coal or oil if the gas company tries to crowd him."

His theory is that since both producers and consumers are organized to act as units, with the state as an arbiter between them, they will agree upon a price which "will be substantially the same as the price in a freely competitive market." This statement implies that behind the system of group bargaining there is some basis of competitive comparison—the very assumption that is under scrutiny in this paper. Without such a basis it is difficult to see how group bargaining would be any more competitive than individual bargaining.

fixed, in accordance with the theory of monopoly price, at or below this upper limit depending on the existing elasticity of the demand and on any temporary condition of oversupply of production facilities. The fact that in the history of the industry the price of electricity has rarely reached this upper limit can hardly be ascribed to the effects of competition; rather, it has resulted from the attempt of the industry to adjust its price schedules to the prevailing elasticity of demand and to supply conditions in such a way as to achieve maximum profits. It is mere sophistry to maintain that a competitive situation exists here, or that the price of electricity is set by competition. It would be just as logical, although perhaps more extreme, to maintain that freight rates from Chicago to Saint Louis are determined by the potentiality of disgruntled individual shippers building their own railroads between these two points in order to supply their own transportation needs. Competition can be effective only when the cost differential, considering every element of individual and joint costs, between two alternative methods of production is either very small or so factually undetermined that the way is open for reasonable business judgment. In the electric light and power industry this condition exists ordinarily only in the case of large or favorably situated industrial and municipal enterprises, and in such special instances as where electricity is a by-product or gives rise to a by-product in some other industrial process.

The second of Professor Cabot's criteria of competition, namely, the existence of an "almost infinite variety of substitutes," is likewise inapplicable generally to the electric light and power industry. While energy for lighting and power purposes may be derived from sources other than electricity, such as the direct burning of oil products, coal, wood, gas, or other combustible materials, in many situations and for many economic processes these other forms of energy are vastly inferior in efficiency to electricity. In terms of relative cost, quantity of output, quality of output, and general working or living conditions, very few of these possible substitutes can compete on even approximately equal terms with electricity. As the nation becomes more urbanized and industrialized, the relative superiority of electricity over other forms of energy becomes more apparent. Again it is a question of differentials. Where the superiority of electricity over substitute forms of energy is very great, the consumer has no effective bargaining power; he will pay a high price for electricity rather than suffer the relative disadvantage of being forced to utilize an inferior substitute. Only in cases where the relative superiority of electricity is very small or perhaps questionable does effective competition exist. Although many instances can be cited where the relative superiority of electricity over other forms of power is unproven, and other instances can be cited where electricity in its present stage of development is distinctly inferior to other forms of power, the fact remains that for many purposes electricity enjoys a very considerable differential advantage over any possible substitute. As time passes this differential advantage tends to become larger and more certain. Competition, consequently, becomes less and less effective until for all practical purposes it may be said to have disappeared. Reverting to the analogy of transportation, there was a time when the horse-drawn buggy was a close competitor of the automobile; reasonable doubt was expressed as to which was the better means

of conveyance. Today, in modern communities, the superiority of the automobile has been demonstrated so completely that effective competition between the two no longer exists.

The above brief analysis indicates a serious theoretical weakness in the thesis that the electric light and power industry is a competitive one. The assertion that consumers may produce their own power or use substitutes is not sufficient. The mere fact that technically they can do this is no evidence in itself that competition exists. Competition actually exists as an effective price determinant only when consumers can produce their own power or use substitutes with economic advantage to themselves. In the great majority of cases in modern urban life and present day industry consumers can do neither of these things without considerable disadvantage to their own economic well-being. In lieu of paying the monopoly price, they may do without electricity, produce their own electricity at perhaps excessive cost, or use some inferior substitute. The first of these alternatives will deprive the individual of the privilege of participating in the comforts and conveniences of his environment; the second and third will place him at an economic disadvantage in the competitive struggle. Thus the conclusion seems evident that the presence of large cost and utility differentials, in a condition of local monopoly, constitutes an effective barrier against the functioning of competitive forces.

Statistical data of sufficient comprehensiveness and reliability are not available to prove the extent of these differentials in all their ramifications. Consequently, statistical proof that competition is non-effective is difficult to assemble. However, analysis of statistics of the light and power industry serves to indicate the broad general groups of consumers among whom competition has very little effect on prices, and, in like manner, the general groups among whom competition is a price factor of considerable importance. A comparison of these groups gives a general picture of the relative significance of competition as a price factor in the industry. With this thought in mind the figures in Tables I and II are presented. They have been taken from a *Statistical Bulletin* issued in June, 1928, by the National Electric Light Association. The claim is made for them that they represent 100% of the industry.

Let us first observe the statistical data for that group of consumers in which competition, by common experience, appears to be a relatively unimportant price factor. In this group are 21,318,831 consumers out of a total of 21,894,960, or over 97% of the total number. During

TABLE I. CUSTOMERS, SALES, AND REVENUES FOR DIFFERENT CLASSES OF SERVICE, 1927*

Class of Service	Number of Customers	KW. H. Sold	Revenue from Sales
Domestic (all uses)	17,860,288	7,388,541,000	$502,742,900
Retail Light & Power	3,441,153	10,580,433,000	484,527,900
Wholesale Light & Power	563,602	36,787,102,000	539,814,200
Municipal Street Lighting	17,390	1,349,372,000	68,340,500
Street Railways†	810	4,634,216,000	43,522,800
Steam Railroads	18	481,239,000	4,932,700
Miscellaneous	11,699	370,964,000	6,874,300
Totals	21,894,960	61,591,867,000	$1,650,755,300

*Table II, p. 3, *Statistical Bulletin*, No. 2, National Electric Light Association, June, 1928.
†Includes also Interurban Electric Railways.

the year 1927, this group of consumers purchased 19,318,346,000 kw.h. of electricity out of a total supplied by the industry of 61,591,867,000 kw.h., or 31.36%. For this energy they paid $1,055,611,300, or 63.95% of the total sales revenue received by the industry for that year. The average price per kilowatt-hour determined from the aggregate for this group was 5.46 cents.

The second, or competitive group, includes 576,129 consumers, or less than 3% of the total number of consumers. During the year 1927, this group purchased 42,273,521,000 kw.h. of electricity, or 68.64% of the total kw.h. sold by the entire industry. For this energy they paid the sum of $595,144,000, or 36.05% of the total revenue received by the industry. The average price per kw.h. sold to this group of consumers was 1.40 cents.

TABLE II. PERCENTAGE DISTRIBUTION OF SALES AND REVENUES, AND AVERAGE RATE BY CLASSES OF SERVICE AND GROUPS, 1927*

Class of Service	Per cent. of Total Sales	Per cent. of Total Revenues	Average Rates per KW. H.
Non-Competitive Group			
Domestic (all uses)	12.00%	30.46%	6.80 cents
Retail Light & Power	17.17	29.35	4.58
Municipal Street Lighting†	2.19	4.14	5.06
Total	31.36	63.95	5.46
Competitive Group			
Wholesale Light & Power	59.72	32.70	1.47
Street Railways	7.53	2.63	.94
Steam Railroads	.79	.30	1.02
Miscellaneous	.60	.42	1.85
Total	68.64	36.05	1.40

*The above calculations are based on the data in the preceding table. The division into non-competitive and competitive groups is determined by the relative extent to which the different classes of consumers are able to produce their own power requirements or use substitutes without thereby suffering an economic disadvantage. This classification is relative, not absolute; it is recognized that the gradation from a state of non-competition to one of active competition, in actual life, is a matter of degree. This qualification is especially applicable to such large and varied groups as Retail Light and Power and Wholesale Light and Power.

†In most cities, except a few large ones where street lighting is a by-product of a water supply or sanitation system, the volume of electricity required for lighting the streets is too small to warrant large-scale production. Hence, when a city has granted to a private company the exclusive right to supply all other uses of electricity, the remaining demands for street lighting will not warrant production by the most economical methods. Under such conditions, which occur quite frequently, a city is not in a position to offer effective competition.

Thus, while the non-competitive group purchased only 31.36% of the entire energy supplied by the industry, they contributed 63.95% of the total revenue received by the industry. The competitive group, on the other hand, purchased 68.64% of the total energy supplied but contributed only 36.05% of the total revenue. In terms of average unit prices, *the non-competitive price was 3.9 times the competitive price.* This difference is explainable in part by the fact that electricity within the non-competitive group is sold on a retail basis, while within the competitive group it is sold on a wholesale basis. In retail selling of electricity the additional expenses per unit of sales for transmission, distribution, and general overhead make necessary a higher price than for wholesale energy. While costs of retail business are greater than those of wholesale business, yet no creditable evidence has been advanced thus far to prove that such a wide discrepancy between two types of costs exists in the electric light and power industry. The only reasonable conclusion seems to be that, for those consumers who cannot produce their own electricity or use substitutes, the price is fixed on a non-competitive basis, that is, "what the traffic will bear" as modified by the theory of maximum profits to the utility company. For those consumers who can, without suffering economic disadvantage, supply their own needs or use substitutes the price is fixed on a competitive basis. The statistics indicate that an overwhelming majority of the consumers of electricity in this country at the present time belong in the non-competitive group; for them competition long ago ceased to have any practical significance as a price-controlling factor.

Enough has now been said to indicate the weakness of Professor Cabot's the-

ory. It has been shown that his original assumption that electricity is sold under predominantly competitive conditions is not generally applicable. The fault in his method lies in the assumption that a set of conditions which exist in certain special instances is generally applicable to the whole field of electricity consumption. In the opinion of the writer, such an assumption is unwarranted both on theoretical and factual grounds. Moreover, the theory that the price of electricity can and should be determined by the competitive method of price comparison is not only unsound but impossible of general application for the very simple reason that, for many classes of consumers, competition is not effective and, hence, no competitive standard of comparison obtains. To enforce a price comparison between electricity produced under modern large-scale methods and electricity produced under more costly alternative methods, or between electricity and some inferior substitute form of power, is socially unthinkable. Such a policy, under a regime of local monopoly, would forever bar certain classes of consumers from participating fully in the benefits of economic and technical evolution.

Many students of public utility affairs will doubtless sympathize with Professor Cabot's indictment of the present regulatory system. They cannot, however, accept as valid his explanation of the causes of this situation or his remedial proposal. If the experience of the last 30 years has shown anything, it has shown an unmistakable tendency toward increasing monopoly in the electric light and power industry. Monopoly has flourished both from natural causes and by reason of government policy designed to secure the advantages of centralized production. To assume now after many years of conscious fostering of monopoly that it does not really exist but that we actually have a state of competition is preposterous. Whatever may be the faults of the present regulatory system (and admittedly serious weaknesses are evident), clearly public policy is fundamentally correct in maintaining that a necessity of life produced by monopolistic organizations created and sponsored by the government must supply service at cost. A state that takes any other position in effect extends to a privileged few the power to levy toll on all others. As for the managers and owners of public utility enterprises, they must either accommodate their actions and policies to this broad principle of public policy or else be prepared to experience the coercive power which organized society for its own protection brings to bear against those who for their own gain transgress its fundamental rules of conduct.

SOME SUGGESTED CHANGES IN THE CONTROL OF URBAN DEVELOPMENT

By COLEMAN WOODBURY

MANY economists find that large cities are excellent illustrations of the insufficiency of laissez-faire doctrine. Until the last few years the development of urban communities has been brought about through uncontrolled private initiative. The results have not been even close approximations to the efficiently working systems outlined by some writers as the inevitable consequences of leaving economic affairs to the judgment and effort of individual property owners. For a long time, the brilliant advances in technical and scientific skill which have transformed city life blinded most observers to the avoidable wastes and losses which are now quite apparent to even a casual student of urban development. Laissez-faire policy can properly be charged with a large part of the enormous toll which congestion takes daily from business and industry, the disproportioning of urban areas among residential, commercial and manufacturing uses, the inadequacy of parks and playgrounds, the losses resulting from excessive shifting of districts and from placing incompatible uses next to one another, the unwise speculation in urban sites which costs the families of small means millions of dollars annually, and the absence of amenities from the greater part of the residential sections of cities—all features of urban conditions of the present.

The growth of city zoning and planning shows some appreciation of the folly of past policy. The April, 1929, report of the Division of Building and Housing of the Department of Commerce shows 754 municipalities in the United States with zoning ordinances. Of this number 475 are comprehensive ordinances, i. e., they control the use, height and area of buildings, although the first comprehensive zoning ordinance in the country was passed in New York City in 1916. Encouraging as this growth may be, it should not be taken to mean that all that remains to be done is to get more zoning ordinances on the statute books nor should this progress divert attention from the many problems of urban land control which today are far from solved.

This article suggests four changes in present regulatory measures, i. e., in zoning and subdivision control ordinances, and presents a brief argument for each. Obviously, only a few of the objections anticipated can be dealt with in a short article. One type of disagreement, however, may well be considered in advance and the more specific objections will be taken up with each proposal. Much loose thinking is couched in the phrases "strengthening" or "weakening" the ordinance. Usually a change which imposes more restrictions on the property owner is held to "strengthen" the ordinance; and, vice versa, any change which removes restrictions is thought to "weaken" it. This common attitude has probably an historical explanation. When first brought forward in this country, zoning faced a barrage of denunciation and invective much of which seems ridiculous today. Some of the objections were traceable to ignorance and misunderstanding, others to sentimental and traditional views of prop-

erty rights, and still others, of course, to real difficulties many of which are yet to be solved. But one of the effects of this kind of opposition was to align two factions: one in favor of more zoning restrictions and one against such limitations. Most writing on zoning still reflects glimmers of this old enmity.

The more intelligent view which has been encouraged by many court opinions might perhaps be stated in the following brief summary. The unfortunate results of uncontrolled development of urban areas are apparent to any fair-minded observer. The first aim of planning, zoning, and subdivision control ordinances is to check the growth of these undesirable conditions without causing more grave disorders. This is not the sole aim of such measures but certainly it is a purpose which should never be overlooked. If this view be accepted, proposed changes will be judged by their net results in promoting urban conditions which are thought to be desirable and not by an uncritical standard of "strengthening" or "weakening" the existing ordinance.

Of the four changes suggested in this paper three of them, one of which has to do with zoning and two with the subdivision control ordinances, are for the removal or loosening of restrictions commonly imposed today. The fourth means a considerable addition to subdivision control statutes. Briefly stated, the suggested changes follow: (1) that subdivision control ordinances which prohibit cul-de-sac or dead-end streets in residential districts be revised; (2) that the maximum length of block allowed be greatly increased; (3) that the single-family house provision be replaced in certain residential districts by density of population restrictions to allow the economies of group-house construction in the cheaper residential sections; (4) that vacant urban land recorded for sale be classified according to certain essential characteristics and that this classification be stated on all papers having to do with the sale, lease or financing of this land.

I. Regulation of Cul-de-Sac Streets

The prohibition of cul-de-sac streets found in the Cleveland subdivision control ordinance may be taken as fairly representative of a considerable number of ordinances. It reads: (12) "No so-called dead-ended streets will be approved for dedication except where physical conditions make the extension of such a street impractical; in such cases a dead-end street may be approved, provided that adequate turning space for vehicles is placed at the dead end." The second paragraph of the section defines "adequate turning space."

This attitude of regarding cul-de-sac streets as allowable only under unusual conditions is based largely on two assumptions: that (1) such streets increase the fire hazard and (2) hinder free flow of traffic. The engineers of the Chicago Board of Underwriters, in correspondence with the writer last summer, stated that residential buildings of less than four stories located on dead-end streets not more than 500 feet long and with a pavement width of 30 feet would be rated the same as similar structures located on main streets. Two paragraphs of caution from one of the letters of Mr. J. A. Neale, Chief Engineer, should be noted:

"The desirability of having fire apparatus approach the building on fire from more than one direction is of very little importance in residential sections where it is not necessary to concentrate large quantities of water in one block as would be necessary in fires in congested areas."

"The grading of the fire protection of the town is affected by the proportion of water

mains that are dead-ended. This would have some bearing in this case, but could be offset considerably by making the dead-end mains of ample size or possibly cross-connecting them at the ends through alleys or private property."

The charge that cul-de-sac streets impede traffic should be considered carefully. Streets which are intended for traffic arteries but stop at one subdivision boundary and are not extended by the subdivider of adjacent land are a decided inconvenience and should be prevented. But the present thought on traffic problems tends toward specialization of streets: wide streets for through traffic, truck highways, lanes for vehicles of widely differing speeds. The subdivision control ordinances might be modified to prevent dead-end streets in what constitutes the major street system of the area, but regulations to avoid non-connecting major streets need not prevent variety in minor street layout. The phrase "major street system" is used in the sense common to most city planners to include the streets which furnish direct connection of a district with other sections of the city and region. In the minor street system dead-end streets would be required, of course, to include sufficient paved area at the closed end to insure easy turning of vehicles. A circular area 75 feet in diameter would probably be fully adequate.

If properly designed cul-de-sac streets in residential areas do not increase the danger from fire and do not impede traffic when limited to the minor street system, the objections to their use would seem to dwindle in importance. But the change in regulation and the introduction into the subdivision ordinance of the distinction between major and minor streets demand evidence of some positive advantages. Of course, no one advocates that all minor streets should be of the dead-end type. Significant advantages of its use, however, are not hard to find. In the first place, the use of dead-end streets lessens the amount of land in minor streets. Land in streets and alleys makes up from 25 to 40% of the entire municipal area in the prevailing types of layout. A conservative estimate of the saving possible in a cul-de-sac design is 7 to 10% of the municipal area. The area saved can either be used in widening arterial highways and boulevards, that is, putting the street area where it is needed, or it can be transferred to some other use, for example, parks, playgrounds or lot use.

Perhaps of equal importance is the possibility which this type of layout provides for quiet and separation from noise and confusion in residential districts. Under present conditions this most desirable quality is obtained usually only in residential districts with extraordinarily large lots. But a small lot would share these advantages and be much more attractive to most persons if located on a small street unused by through traffic. Even for medium-sized lots of the better residence sections the cul-de-sac street could be used to increasing advantage. Some years ago the heavy traffic streets were those having street car lines and much of the frontage on them was in business or semi-commercial use. Today streets and boulevards, carrying high-speed cars and busses, are cut through some of the most attractive residential districts to the detriment of their quiet and seclusion. Only a part of the frontage on through streets can be used for business. Cul-de-sac streets running from the arterial highways would save new residence districts from much of this danger and would encourage the building of distinctive and harmonious houses in each cul-de-sac.

Another advantage to be mentioned is the adaptability of cul-de-sac layout for utilizing odd-shaped areas which are found in any but a strictly rectangular layout. A triangular or trapezoidal area formed by a diagonal street can often be attractively and interestingly laid out without recourse to overly long lots, an extra street or a poorly located park area or playground.

A short survey of the possible advantages of this type of layout, compared with the objections to it, warrants the suggestion that it be allowed under proper restrictions. Such a change in subdivision ordinances would give scope to the planner and increase the possibility of many pleasant residential districts of medium-sized lots reasonably removed from the danger, noise and inconvenience of through traffic streets.

II. Increasing Block Lengths

The second proposal is that the maximum length of blocks allowed in subdivision layouts should be increased. Many subdivision ordinances limit blocks to 800 feet in length, others are more generous and set the maximum at from 900 to 1,000 feet. The specific proposal is to increase the allowed length to about 2,000 feet or perhaps even 2,500 feet. As in the suggested change of regulation of minor streets, the arguments behind the present regulations, as well as the advantages claimed for the new practice, must be examined.

Long blocks were feared for a number of reasons. Without some means of requiring cross streets a subdivider might cut off one or more arterial streets which could be extended only by condemnation proceedings. Fire hydrants and street car stops located at street intersections might be far from houses in the middle of the block. Long blocks were thought to encourage rapid or even reckless driving because drivers did not have to watch out for many cross streets. Pedestrians were inconvenienced by long blocks because rapid driving made crossing in the middle of the block an unsafe procedure and the intersections of long blocks often were distant. No doubt, too, the traditional short block in American cities influenced officials in framing regulations for subdivision platting.

Some of these arguments still have force, others may be dismissed. Traffic officials try to increase, within limits to be sure, the rate of traffic flow. Instead of slowing the speed of motor cars by the fear of cross streets the effort is to get through traffic on boulevards "routed" for it. Some limit on the length of blocks is needed for the continuance of such boulevards but they seldom run within a sixth of a mile of each other. Fire hydrants can be located at other places than major street intersections and not all street car stops need to be placed at crossings. Pedestrians can visit many homes within a large block without crossing the major thoroughfare and with the widespread ownership of motor cars trips of any considerable distance are usually made in them.

In estimating the advantages of long blocks the possibility of combining them with cul-de-sac minor streets, as is being done in Radburn, New Jersey, by the planners of the City Housing Corporation, should be kept constantly in mind. This is not a necessary combination but it promises much in the way of improvement of customary street layout. With large blocks interior playgrounds are possible in the center of the block for the use of its residents. Such areas do away with the necessity of small children going considerable distances, perhaps crossing major streets to

reach a vacant lot or playground. The aesthetic effect of a properly kept interior park area is immeasurably superior to the alley and rear yard arrangement of the customary city block. A large block with its large number of residents makes possible the development of certain neighborhood features, if they are desired, and mere size protects a large block to some extent from the untoward effect of misplaced improvements in an adjoining block.

The possible hazard to pedestrians crossing a major traffic artery in the middle of a long block seems offset not only by the ease of going from one part of a large block to another but by the construction of pedestrian underpasses at intersections. Such a separation of foot and vehicular traffic is hardly feasible at all intersections in a small block layout but could be used at many, if not all, busy crossings in a large block plan merely because such crossings would be much fewer in number. In case the major street bounding the block were an artery with six or seven lanes of traffic, inner or service drives probably would be provided. These could be designed to allow entrance to the main roadway in the middle of the blocks as well as at the ends. If it were thought necessary to provide short breaks in the traffic by stop lights at these mid-points at certain times of the day, the crossing of passengers and the entrance of cars from the service lanes would be protected at least as well as at the present street intersections.

One other probable effect of encouraging these features of residential layout deserves scrutiny. The subdivision business is highly speculative. Some elaboration of this statement will be made in the discussion of the fourth proposal. The general statement would hardly be questioned, however. Probably not many more questions would be raised by the assertion that the common gridiron layout stimulates or at least encourages speculation. The connection is not difficult to locate. Speculative buying feeds on the possibility of changes in use with accompanying changes, usually naively assumed to be rises, in value. Standardized layout helps the salesman to infer or the buyer himself to imagine such changes for almost any lot. All lots look alike and, unless deed or zoning restrictions are in force, no reason is apparent to the inexperienced, optimistic buyer why his lot should not soon be in a prosperous commercial district and worth 10 times its present sales price.

Further elaboration of this attitude is not necessary. The influence of layout may be illustrated by a question: Would such speculative arguments be as effective for a lot on a cul-de-sac street in the middle of a 2,000 foot block? It seems at least reasonable to suppose that even the more hopeful buyers would realize that such a lot is designed for residential use and that any increment in value for some time to come will in all probability have to be based on such residential use. This is not claimed to smother all speculative buying, but it certainly would discourage some of it.

The objection might be raised that such layouts would choke commercial growth. But to this it need hardly be said that, with the present knowledge of retail business requirements for land, little excuse exists for not making ample provision for such needs. In exceptional cases the specialized layout would not prevent entirely change to business use. Some replatting would be necessary but this would not be an insuperable obstacle if a real demand were felt. In fact, change to business, storage, or industrial use could be made much more

easily than if a 30- to 50-year deed restriction had to be allowed to run its course or be broken by a court of equity.

These first two proposals may seem to some readers to be concerned with mere arrangement or layout which may well be considered by planners but dismissed by others as technical detail. The writer believes, however, that they deserve careful attention. No intelligent person dismisses possible changes in manufacturing or transportation processes as technical detail. He knows of too many cases in which such seemingly minor changes have exercised far reaching economic and social influences. The same chain of influence exists in matters of land utilization, although the relatively small amount of popular attention which it has received and the slowness of subdividers to take advantage of changes in residential planning have conspired to conceal the fact.

III. Provisions for Group-House Construction

A statement of the third proposal would probably be looked at askance by most exponents of zoning. The single-family, detached house district has been established only after many court battles. A proposal that it be abandoned in large areas and restrictions be changed to allow group houses must be justified. But the argument for the change is quite simple and direct. Fine as a well planned and located detached house may be, the fact remains that thousands of single-family houses in American cities today provide inexcusably poor housing; crowded together on narrow lots with four or six feet between them, shoddily built to lower construction costs, monotonous in appearance, with front and backyards too small for recreation, or even a pleasant appearance. Thousands of them in such cities as Chicago stand as monuments to the folly of uncritical imitation. Privacy, quiet, individuality, and some space for play, which are the admitted merits of the single-family houses of higher-income classes, are almost wholly absent.

Under the present single-, double-, and multi-family residential restrictions the residential districts for low-income groups—say for persons of less than $2500 or $3000 annual income depending on the city—are in a most unhappy position. If they are zoned for single-family districts, the sort of development suggested above is apt to be the result. If the zoning ordinance puts them in an apartment house classification, which would allow group houses, the possibility of tenement house use raises land values to a point which offsets the economies of group-house construction. A two-family zoning regulation helps but little. It prohibits most group houses and the two-story, double-family house district shares the weaknesses of the cheap single-family district with the added disadvantage of a higher density of population. Partially as a result of this dilemma, new houses of any acceptable quality of construction are not being built for families of these income classes in American metropolitan cities despite the rapid increase in their population[1]

In the proposal made, such areas as are to be residential districts for lower-income families would be zoned merely as residential districts and protected against overcrowding by limiting the density of population per acre or fraction of acre. Such density of population restrictions are found today in many ordinances in addition to the single-, double-, and multi-family restrictions.

[1] The possible exception is Philadelphia in which row houses can be built and sold cheaply.

Group houses allowed by such a change have several points of superiority. Although usually confused with the dreary row houses of English cities and some of the cities of the eastern states, they do provide opportunities for variety in arrangement without any considerable increase in cost. Shallow court groupings, which English planners call "road bays," and proper placing of three-, four- and five-unit groups can be used to good effect. Group arrangement, by consolidating the area actually covered by the structures, can make the vacant area much more usable for gardening or play. As for privacy, a well-constructed party wall certainly guarantees more of it than a four- or six-foot side yard with the windows of the adjacent houses facing each other.

Perhaps of even more significance in lower-income-group housing are the savings in construction and maintenance costs. Henry Wright, one of the foremost housing architects of the country, is authority for the statement that "with similar characteristics of interior finish and accessories, the row house in brick costs only a trifle more than the detached house in wood."[2] A noticeable saving is also made in all municipal and public utility connections which run to the group rather than to the separate units. Savings in heating costs in the central units of a group are considerable, running in some cases to 50–60% of the cost of fuel for a detached house of the same size.

In closing the discussion of zoning changes to encourage this type of housing, a word of warning is in place. The proposal does not anticipate the abolition of all single-family districts. This should be quite clear. On the other hand, it does not imply that group houses should be limited entirely to the lower-income group mentioned, although they probably show to the greatest advantage there. But the group house holds promise for better and more varied housing of the medium-income classes if members of these classes up to about $4,000 to $5,000 income can cure themselves of aping the type of house lived in by the man of larger means. Anyone can see that the standard of expenditure of the two groups varies markedly and copying the single-family, detached house type of architecture seems a sacrifice of good sense to class pride and emulation.

IV. Classification of Recorded Lots

The statement previously made in this article that the subdivision business is highly speculative is generally accepted. A means of measuring, or at least suggesting, the enormous loss and waste suffered by municipalities as well as by individuals under the present methods is now available. Some excellent studies of the number of lots placed on public record in several urban districts have been made. Of these, the most comprehensive one yet published is that by Professor Ernest M. Fisher of the University of Michigan[3] from which Table I was worked out. Column (f) should be explained. Total lots recorded (d) includes business and industrial as well as residential lots. A certain amount of vacant land of all kinds is desirable just as a small vacancy in apartments or office building space is desirable. With such a reserve the bargaining power of the buyer or lessee is strengthened and

[2] *Proceedings*, International Housing and Town Planning Congress (1926). Vol. I, p. 267. The same fact is supported from a different point of view in Cuthbert E. Reeves, "The Appraisal of Urban Land and Buildings" (Municipal Administration Service, 1928), p. 57–58.

[3] "Real Estate Subdividing Activity and Population Growth in Nine Urban Areas," Ann Arbor: Michigan Business Studies (1928). Vol. 1, No. 9.

moderate expansion of one use-district is possible without encroaching on another. This desirable vacancy reserve was estimated at 8 to 10% and the number (not the area) of business and industrial lots at 7 to 9% of the total, together 17% of all lots recorded. The total number of lots recorded in 1926 (d) was reduced by 17% and the resulting number multiplied by the average number of persons per dwelling in each city (from the 1920 Census) to obtain the population figure in column (f). This represents the population which could be supported on the lots available in 1926 at a density per lot the same as in 1920 with due allowance for non-residential uses and vacancy reserves. The ultra-conservative nature of this estimate is shown by the fact that the density of population used is that of 1920, despite the fact that the residential trend since 1920 in nearly all urban areas is toward multi-family or apartment units.

Column (g) is merely a comparison of this estimated population with the 1926 populations. For example, the lots subdivided in Milwaukee, if 83% were used for residence, could support a population over twice as large as the present one.

That such a condition means heavy loss to many owners of lots need not be proved. The sole hope of thousands of owners of such lots is another "boom" of the market during which they can "unload" on other unwary buyers. The economic loss of taking hundreds of acres valuable for truck farming or recreational purposes out of these uses without putting them to another use for many years is also evident. The financial burdens on the municipalities for providing fire and police protection, extending streets, alleys, water and sewage mains is enormous. To aggravate the situation many smaller cities are handicapped by wholesale defaults on taxes levied on these subdivision lots. Such headlong subdividing forces planning bodies either to extend their more detailed activities too far into the future and thus increase the chances of error or to find themselves faced with the necessity and expense of condemning land to correct the situations to which unplanned and uncontrolled subdivision has always led.

TABLE I. POPULATION AND CAPACITY OF SUBDIVIDED LOTS IN NINE URBAN AREAS IN 1926*

No.—Urban Area (a) (b)	Population 1926 (c)	Total Lots Recorded 1926 (d)	Persons per Dwellings–1920 (e)	Minimum Capacity of Lots–1926 17% Reserve (f)	Population (f) as Percentage of (c) (g)
1. Detroit	1,567,830	1,181,832	6.5	6,375,984	407%
2. Cleveland	1,110,574	336,570	6.8	1,899,601	171
3. Milwaukee	560,625	208,545	6.8	1,177,028	210
4. Toledo	313,462	137,988	4.9	572,650	183
5. Birmingham	282,974	124,356	5.1	526,399	186
6. Grand Rapids	169,864	93,666	4.7	365,391	215
7. Flint	154,231	82,444	5.6	383,200	248
8. Lansing	79,155	35,273	4.7	137,600	174
9. Ann Arbor	22,710	8,552	4.7†	33,361	147
	4,261,425	2,209,226		11,471,214	269‡

*All data are from Ernest M. Fisher, "Subdivision Activity and Population Growth in Nine Urban Areas" (Ann Arbor: University of Michigan, Michigan Business Studies, 1928) except column (e) which is from the 1920 Census, Vol. II, Ch. XIV.
†Not given in United States Census; lowest figure of other cities assumed.
‡Percentage of aggregates, columns (f) and (c).

A fact which the table does not reveal is the sale of many lots, the writer knows of thousands of lots of this character in the Chicago area, which have not the bare essentials of urban use—drainage and accessibility. They are covered with water every spring and fall and some can not be reached by car during at least four or five months of the year. Another practice of some subdividers consists in taking prospects through a first-rate subdivision of another developer, calling attention to the improvements installed and giving the impression that this area has been developed by the salesman's company. Later the land of the salesman's company which has no improvements installed is reached. Some prospects do not even ask about improvements; those who do are given the answer that the improvements have not been installed in this section *yet*. The entire process, regardless of its variations, is merely misrepresenting the land for sale, building up an impression based on another man's subdivision without any attempt to inform the buyer of actual conditions of the lot he is thinking about purchasing.

It is undoubtedly true that many buyers do not care about improvements; they are buying to sell, not to use the land. But quite as surely many do hope to build and find after they have made payments on a lot that they have been deceived, that they did not anticipate the difficulties and slowness of securing improvements, that they must either hold the land for years and bear the inevitable carrying charges or let it go in a tax sale. This unsavory nature of much of the real estate business also discourages some financially able people from buying real estate. They realize they are inexperienced in such affairs and do not feel safe in relying on the advice of "facts" or the salesman. A much easier course is to rent and avoid the dangers of buying and the bother of owning and maintaining urban real estate.

Any attempt to measure in monetary units the losses entailed by the past policy toward real estate activity would be a pure estimate. In any large metropolitan area it must run into tens of millions of dollars annually. It should be recalled that all losses are not borne by the "sucker" himself. Some are felt by the reputable real estate man, others are felt by every taxpayer in the region. The recent investigation of graft and inefficiency in the administration of the Sanitary District of Chicago[4] revealed conditions which are exceedingly expensive for the urban region but in all probability not one-tenth as expensive as the policy pursued in subdivision activity. No other considerations than the economic loss are involved in the comparison. But whereas the Sanitary District is now the focus of public attention, the old attitude seems to endure regarding subdivision activity, an attitude which holds that buying and selling land is a question of a bargain fairly arrived at and about which no one need concern himself except the buyer and the seller.

What can be done to change the present wasteful process without incurring heavier losses? Several answers might be made, but only one can be presented in such an article. This proposed answer is an enlargement of a suggestion made to the writer a short time ago.[5] The suggestion, made in the form of an analogy to present "blue sky" laws for securities, encouraged the definite formula-

[4] See *Report*, Committee on Public Law Offices, Chicago Bar Association, April 4, 1929.

[5] By Dr. Richard T. Ely from a letter from Mr. Paul Stark of Madison, Wisconsin.

tion of some thoughts on the matter which had been in mind for some time.[6]

The proposal is to set up a classification of all subdivision residential lots based on a few easily determined, yet fundamental qualities of such land, and to demand that all legal papers referring to the lot give its classification and the qualities required for such a rating. The enforcing of such regulations might properly be undertaken by county officials or perhaps, as has been suggested to the writer, by the real estate boards. The essence of the plan is to set up standards which are definite and leave very little to the discretion of the enforcing officials and so make clear the exact grounds of the classification. The last qualification is necessary to minimize the possible misrepresentation of the classification, for example, an inference that class B refers to a certain value or justifies a certain price. A warning in this regard might well be included as a part of each notice of classification.

As a tentative classification the writer suggests the following:

Class A—

(1) (a) The lot shall be so drained, either naturally or artificially, that it is, in the opinion of the county surveyor, suitable for dwelling house purposes at all seasons of the year.

(b) The lot shall be accessible from the city's central business section, or from the central business section of the nearest city if outside of municipal limits, by at least one route, the streets of which are paved or surfaced so as to be passable at all seasons of the year.

(2) The lot shall have the following municipal utilities completely installed. If any portion of such installation is not paid for in full, the date and amount of each payment to be made must be given.

(a) Water: according to the specifications of the municipality or of the nearest municipality if the lot is outside of municipal limits.

(b) Sewerage: according to specifications as in (a).

(c) Street pavement: according to specifications as in (b).

(3) The lot shall be within the service limits of the following public utilities; i. e., it shall be so located that public utility companies have extended or will extend their mains free of charge for the service of any house erected on the lot.

(a) Electricity.

(b) Gas.

(4) The lot shall be located within a settled district; i. e., a district such that ¼ of all lots in an area composed of the block in which the lot is located and all lots touching its boundary streets, are built upon.

Class B— Lots meet requirements (1), (2) and (3).

Class C— Lots meet requirements (1) and (2).

Class D— Lots meet requirements (1) and (3).

Class E— Lots meet requirements (1).

Class F— Lots meet none of requirements.

In more general terms the four qualities concerned in all the classifications are: (1) drainage and accessibility, (2)

[6] See Orman S. Fink and Coleman Woodbury, "Area Requirements of Cities in the Region of Chicago, 4 *Journal of Land & Public Utility Economics* 273–282 (August, 1928).

and (3) essential utility services, and (4) location in an established district. The outline of classification might be criticized either as to the qualities selected as the basis for classification or as to the more detailed statements by which these qualities are defined. The reader should, however, clearly distinguish the two. For example, some reader might agree with the writer in putting accessibility as an essential quality of any land described as a residential city lot but might hold that the definition of accessibility in (1) (b) is inadequate. His objection would be quite different from that of a person who believes that the degree of development of surrounding property is not of sufficient importance to warrant placing it in the classification at all.

One other comment of a general nature seems pertinent. One of the difficulties in drawing such a classification or in revising or criticizing one is to guard against including too many characteristics. For example, minimum size of lot in width, length and area, street widths, and laying of sidewalks quickly come to mind as items not mentioned in the classification given. It must be remembered, however, that other control and planning regulations are in force and should take care of some of the points, particularly in regard to layout. On the other hand, the classification set up is not an attempt to infringe on or to add to the code of ethics of the real estate organizations. Finally, it can hardly be doubted that a too complex scheme of classification would defeat itself, for it would merely further befuddle the buyer.

The primary purpose of the classification is to force certain pertinent facts on the attention of the prospective buyers of residential lots in the hope that this will reduce some of the losses inherent in the present "free-for-all" character of the business. It would thus serve as a protection for the inexperienced buyer for use and might have an educative effect on all persons concerned with urban real estate. Any plan of classification must be tested by its probable, and ultimately its actual, effects in achieving these ends. Other probable effects, such as raising the standards of sales practice and encouraging more careful development of new subdivisions, will be realized only if the classification fulfills its primary purpose. Protection for the buyer is the foundation of the whole plan; all other results flow from it and should be secondary to it in judging the merits of a plan of classification as a public policy.

Summary

Control measures, both public and private, have made praiseworthy starts in directing urban land development. The greatest danger of each is a constant and uncritical copying of certain regulations. Assuredly changes must be made only after due attention and discussion but this fact should in no wise be taken to imply that suggestions for changes are not needed. Additions to our knowledge of cities and changes in the methods of developing them, as well as experience with past control measures, make changes necessary from time to time. Suggestions and criticisms both of present measures and of proposed changes should be expressed. As in most questions dealing with land utilization, the permanence of the results demands thorough investigation of all suggestions but quite as forcibly demands action on proposals which have merit. Every year of delay means that thousands of lots are laid out in a manner to affect their use probably for dozens of years to come. This paper is designed to stimulate discussion on these four regulatory changes.

TAXATION OF RAILWAYS IN CANADA: DEVELOPMENT AND PRESENT STATUS

By HERBERT E. DOUGALL

THE development of railway taxation in Canada has been somewhat unlike that in the United States, in spite of similar conditions of construction, financing and operation. In the latter country the roads passed through four general periods as far as taxation is concerned, i. e., subsidy, exemption, uniformity, special taxation.[1] In Canada no such regular change has taken place. True, the roads have been given substantial aid by federal and provincial governments, in the shape of actual cash subsidies, land grants, and bond guarantees. At the same time, during the main construction period substantial tax exemptions were made, while during the latter part of the expansion of the lines special railway taxes were imposed in most of the provinces. But no sharp line of division can be made between definite periods. In fact, at the present time subsidy, exemption, and special taxation are all in evidence in most of the provinces, and at no time has there been a movement for uniformity similar to that in the United States from 1850 on. The whole situation has been complicated by the active participation of government in railway financing, ownership and operation, aggravating the extent of exemption and limiting the effectiveness of special taxation.

The railway situation in Canada is unique in that most of the mileage is operated in two systems, the Canadian Pacific Railway, a private company, and the Canadian National Railways, the stock of which is owned by the Dominion Government. This latter system is composed, in part, of lines which were originally built and operated by the Government and, in part, of others which have been taken over by the Government[2] because of their inability to meet fixed charges which the Government had guaranteed. Table I summarizes the outstanding facts of this situation, the significance of which, as far as taxation is concerned, will become more apparent later, when the special exemptions of both of the large systems in the several provinces will be pointed out.

Canadian corporation taxation in general, and taxation of railways in particular, presents a veritable patch-work quilt effect, and it is the purpose of this article to set forth an orderly picture of the various methods used under the several jurisdictions, placing chief emphasis upon the forms of taxation with some consideration of their development and effectiveness in each province. In a later article the effects of the non-uniform taxation system, and of the subsidies, exemptions and special considerations upon the relative tax burdens of the railways will be analyzed from actual tax data.

Railway corporations in general are taxed by three distinct jurisdictions: the Dominion Government, the several provinces, and the municipalities (Table II). This classification will be followed in the subsequent discussion.

But in order to understand the methods of taxation of railways in Canada,

[1] See Herbert D. Simpson, "Taxation of Public Service Industries, 1 *Journal of Land & Public Utility Economics*, pp. 44–70, (January, 1925).

[2] The Canadian Northern in 1917 and the Grand Trunk in 1920.

TABLE I. DISTRIBUTION OF MILEAGE, CAPITALIZATION, EARNINGS, AND TAXES, CANADIAN RAILWAYS, DECEMBER 31, 1926*

COMPANY	SINGLE TRACK MILEAGE		CAPITALIZATION (*in Millions*)			EARNINGS (*in Millions*)			Total Taxes Paid Year Ending Dec. 31, 1926
	Miles	Percent. of Total	Funded Debt	Stock	Total	Gross Operating Revenue	Net Operating Revenue	Net Income	
C. N. R. System	20,708	51.32%	$1,823	$609	$2,432	$226	$35	$30†	$3,474,286
C. P. R. System	13,861	34.35	78	653	731	198	48	41	5,722,082
All Others	5,783	14.33	278	119	397	70	21	25	1,587,420
Total	40,352	100.00	$2,179	$1,381	$3,560	$494	$104	$36	$10,783,788

* Compiled from *Statistics of Steam Railways of Canada*, Dominion Bureau of Statistics, 1926.
† Deficit.

it is necessary to go back to the beginning of the federal form of government. In 1867, confederation of the colonies then forming the organized parts of British North America necessitated the transfer of important fiscal rights from the different provincial governments to the federal government, leaving the former in the position of subsidiary entities with only those powers which were expressly delegated to them. The British North America Act of that year gave the Dominion Parliament exclusive rights to levy and collect customs and excise duties.[3] Deprived of this important source of revenue, other methods had to be provided to take care of the expense of the several important functions still left in the hands of the provincial legislatures.[4] Accordingly the power to levy direct taxes within the province for provincial purposes was reserved to the provincial governments.[5]

To recompense the provinces further for their loss of revenue, the Act provided that the Dominion Government should relieve each province of a certain amount of its debt, and a Dominion subsidy was arranged, consisting of (1) an annual grant of 80 cents per head of the population of the province, and (2) a specific sum annually toward the expenses of the provincial government.[6] Thus at the outset a cardinal principal of public finance was violated, i. e., a distinction was made between the collecting and spending authorities for the same revenue. Dominion subsidies form a smaller proportion of provincial revenues than they once did, but it is time that this practice be discontinued.

The provinces which were incorporated into the Dominion in 1867,[7] and British Columbia (in 1871) were allowed to retain all their crown lands, which net them considerable revenue, but in those created since then (Manitoba, Alberta, and Saskatchewan) the title to ungranted public lands has been retained by the Government of Canada for the benefit of the whole Dominion.[8]

I. Dominion Taxes

The only Dominion tax directly affecting the railways is the tax on net income first imposed in 1917 by the Income War Tax Act,[9] and originally a rate of 10%

[3] 30 Vict., c. 3, art. 91 (1867).

[4] See A. B. Clark, "Taxation in the Western Provinces of Canada," National Tax Association *Proceedings* (1914), pp. 434–36.

[5] 30 Vict., c. 3. art. 92 (1867). (Confusion as to the meaning of this provision as far as taxation of railways is concerned was cleared up in *Canadian Pacific Ry. Co. v. Notre Dame de Bonsecours* (1899). See S. W. Jacobs, *Railway Law of Canada*, (Montreal: John Lavell and Son, Ltd., 1909) p. 30.

[6] *Ibid.*, arts. 102–119.

[7] Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island.

[8] See Clark, *op cit.*, p. 435.

[9] 7–8 Geo. V., c. 28 (1917).

on all corporate incomes over $2,000 with one half percent. increase on taxable incomes over $5,000, but which at the present time stands at 8% on all corporate incomes over $2,000. This tax is payable by all lines except those whose property is held by the Crown,[10] and by those to which special exemptions have been given.

II. Provincial Taxation

Provincial taxation of corporations in Canada has taken a remarkable number of forms, no one principle having been followed in all the provinces, and in only one province (British Columbia) has any one method been applied to all types of corporations. Twelve different methods of taxing different types of corporations are in use in the nine provinces, and in Nova Scotia alone nine separate forms of corporate taxation are employed. The railways have shared in this diversity, as Table II shows. An arbitrary lump sum is levied in one province; mileage is the basis in four others; gross earnings in two others; and a rate on an arbitrary assessed value in the remaining two.

Lump Sum Payment. In the three Maritime provinces, a rather unusual situation is found with regard to the taxation of railways because of the preponderance of government owned and operated lines.

In Prince Edward Island, the tiny Province off the coast of her sister Maritimes, the 276 miles of line are operated by the Canadian National Railway System, which pays to the Province the sum of $40,000 annually in lieu of taxation, "this arrangement being in order to compensate Prince Edward Island which would otherwise be unable to tax the property of the federal government."[11] The question of revising this amount is to be reconsidered in 1930. No other taxes of any kind are borne by railways in this Province.

Mileage Basis. In Nova Scotia revenue from taxes on railways is limited by the extent of government ownership and by the extent to which railways were given tax exemption in many municipalities. The Provincial Revenue (Corporations) Act[12] imposes a straight levy of $50 per mile of single main line track and $30 per mile of additional. If a company operates a line over 150 miles long, it pays an additional tax of $20 and $15. Upon each main line between 60 and 150 miles in length the additional tax is $10 per mile for one track. Railway corporations are also subject to registration taxes on their capital stock and a tax of 1/10 of 1% on capital stock, less any amount payable under the special mileage tax.

In New Brunswick a special Railway Taxation Act was first enacted in 1913, and revised in 1916 for the imposition of a provincial levy of from $50 to $100 per mile of track within the Province at the discretion of the Lieutenant-Governor-in-Council (i. e., the Cabinet).[13] At the present time the tax is $100 per mile, the highest rate in any Province.

These last two provinces have apparently followed the lead of Ontario and Quebec in taxing railways.

The older Provinces of Ontario and Quebec led the way in taxation of cor-

[10] Such as the Intercolonial in the Maritimes and the National Transcontinental (a part of the Grand Trunk System), both now included in the Canadian National System.

[11] Letter from the Assistant Provincial Treasurer, Prince Edward Island, September 7, 1927. In 1926, the Canadian National Railways distributed $500,000 among the three Maritime Provinces under this arrangement, $250,000 per annum retroactive to 1925. Of this amount Nova Scotia receives $91,000, New Brunswick $119,000, and Prince Edward Island $40,000.

[12] R. S. N. S., c. 16, sec. 14 (1923). (Original Act, 1921, c. 3, sec. 12.)

[13] 6 Geo. V., c. 35, sec. 2 (1916).

TABLE II. FORMS OF RAILWAY TAXATION, DOMINION OF CANADA.

Taxing Jurisdiction	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
PROVINCE	$40,000 per annum in lieu of taxes. (C. N. R. only)	$50 and $30 per mile of main track; $30 per mile of branch; additional tax of $20, $15, and $10 if line exceeds 150 miles.	$50–$100 for each mile operated over.	$30 per mile of main track; $15 per mile of additional track; $20, and $10 for branch lines.	$60 and $40 per mile in municipalities; additional tax of $40 and $20.	Maximum of 3% on gross earnings in Province (now 2%)	3% of gross earnings if in operation 7 years or more; 1½% if in operation 5–7 years.	1% of value of road set at $20,000 per mile until inquiry.	2% on assessed value of $10,000 per mile of main track, $3,000 for spurs, etc.
LOCAL	None.	On all property assessed at actual cash value (estimated as at auction)	On real estate only, at actual value.	On "immovable" property at actual value, that of land estimated according to average of neighboring land.	On all property except roadbed, land valued at value of land in locality.	On fixed property for municipal improvements only. Land valued at full value, buildings, at ⅓ value.	Same as Manitoba.	On land and improvements at actual value. Maximum assessment of land of $1,000 per mile of right of way.	In organized territories, land at true cash value (as in payment of a debt).
DOMINION	8% of net incomes over $2,000.								

porations, and their legislation, particularly that of the former, has set up precedents which the newer provinces have followed. From the first period of railway construction in the early fifties, however, down to 1899 no special provincial taxes were levied in Ontario, because the Dominion subsidies and the income from public lands, minerals and forests provided sufficient revenue for provincial expenditures for some years after confederation. Ontario has not yet resorted to direct property taxation for provincial purposes. That source has been reserved entirely for the support of the local jurisdictions. "As a result, the people of Ontario have . . . lived in blissful ignorance of the trials and difficulties of administering a general property tax, for the double purpose of furnishing a municipal and a Provincial revenue. They have thereby escaped the fate of practically every American state."[14]

In 1899 Ontario led the way in imposing special taxes upon particular classes of corporations, this new departure being deemed necessary to supplement the provincial revenue. The Supplementary Act[15] of that year imposed a tax of $5 per mile on all railways (main track) regardless of the relative capital employed, value of property, and earnings. In 1904 the tax was increased to $30 a mile, with a rough gradation in rates for extra track.[16] But it will be seen that no change in the system in Ontario has been made from this beginning. Weak lines, strong lines, new lines, old lines, are all on the same basis.

In 1904 a Commission was appointed "to inquire into and report upon the various phases of railway legislation in force in the United States affecting the taxation of railways." The necessity for the investigation had become clear in the hearings before the Assessment Commission of 1902 (described below) and in the growing realization that the provincial tax on railways was inflexible and unproportional. The Taxation Commission turned to a study of taxation of

[14] *Report* of the Ontario Commission on Railway Taxation (1905), p. 8.

[15] 62 Vict., c. 8 (1899).

[16] 4 Edw. VII., c. 3 (1899). See also S. Vineberg, *Provincial and Local Taxation in Canada* (Columbia University Studies in History, Economics, and Public Law, Vol. LII (1912), p. 119.

railways in the United States and selected states "which were most likely to be instructive for Ontario, and in which our Canadian railway systems owned or controlled more or less important sections, or with whose lines they were most intimately connected."[17] All information and testimony available on the subject were examined carefully with the hope that an adequate and equitable system of railway taxation for the Province might be worked out. The questions of the proper form which railway taxation should take and whether corporate property should be taxed on the same basis as private property were particularly examined. The decision of the Commission was that "the popular belief and claim that corporate property can and should be assessed and taxed on exactly the same basis as private property, is quite impossible of realization."[18]

As for railway taxation in particular, the Commission attempted to determine the most equitable basis of valuation for tax purposes, and discarded cost of production, market value, stock and bond values, and recommended a tax on earning power, as represented by gross earnings, or net earnings, if they could be determined accurately. This method was considered the most equitable as well as the simplest, most practical, and most flexible. Furthermore, its operation is a matter of public record, and it is most advantageous in doing away with the difficult taxation of franchises. The Commission also attempted to show that "it is to the interest of the municipalities, as well as of the efficiency of corporate taxation, that the Province should undertake the general taxation of corporations, leaving to the municipalities the right to tax their lands and buildings only,"[19] each railway corporation paying the Province the difference between its total local taxes and the amount of the gross earnings tax. As for the rate of tax, that could be "adjusted from time to time to suit the increasing prosperity of the country and of the corporations," 3% being a rate in common use in the United States.

The Commission was opposed to the existing (and still extant) per-mile tax, maintaining that "a tax on gross earnings, however, would very largely correct these inequalities (between railroads) and would, to a far greater extent than any other system possible of application to the railroads of Ontario, result in an equitable adjustment of the burdens as between the different railroads operating in the Province."[20]

Another significant and forward looking recommendation of this Commission was for the appointment of a Provincial Board of Taxation to administer the corporation tax laws and to prevent double taxation.

The whole work of the Commission has been highly regarded by all students of public finance. Its recommendations were made after a most thorough investigation and study. The legislature followed the second of these recommendations in the following year, when the roadbed was removed from the list of railway property locally taxable,[21] but its major suggestions have been ignored. To compensate the municipalities for the loss resulting from the exclusion of railway roadbed from local taxation, in 1906 it was provided also that one-half of this Provincial revenue over $30,000 be paid out to the municipalities of the Province in proportion to population.[22]

[17] *Report* of the Ontario Commission on Railway Taxation (1905), p. 5.

[18] *Ibid.*, p. 11.

[19] *Ibid.*, p. 30.

[20] *Ibid.*

[21] 6 Edw. VII, c. 36, sec. 13 (1906).

[22] See The Corporations Tax Act, 17 Geo. V., sec. 24 (1927).

The Ontario Corporations Tax Act, as at present constituted, imposes a straight tax of $60 per mile for one track and $40 per mile for additional track (exclusive of switches, spurs and sidings) on railways in any organized territory, and $40 and $20 per-mile tax in addition, paid by lines exceeding 150 miles in length.[23]

The Province of Quebec led the way in the taxing of railway corporations as such, in order to tap the growing personal property in the Province, against which there was no tax, and in 1882 passed the first corporation tax law,[24] two years after that of the state of New York. By this Act certain railways, definitely specified in a schedule, were taxed at the rate of $20 per mile. All those which had received subsidies from the Province paid $10 per mile, and the remainder $5. Changes in the rates were made in 1889 and 1895, and in 1907 all railways were made subject to a rate of $30 per mile for main-line single track, with $15 per mile for each additional track, and $20 and $10 on branch lines.[25]

At the present time railways in Quebec are subject to Provincial levies of two kinds: (1) All companies that have been subsidized by the Government of the Province are subject to a special annual tax of ½ of 1% of the amount of the subsidy, or, if the company chooses, to a tax of 5% of the net earnings, provided the returns establishing such net earnings are forwarded to the Provincial Treasurer in time;[26] (2) All railways carrying on business in the Province are subject to a mileage tax, prescribed by the Corporations Tax Act,[27] at the same rates as designated in the Act of 1907.

Tax on Gross Earnings. In order to encourage the rapid expansion of railway facilities into the Canadian West during the great period of railway building from 1875 to 1900, the new lines were granted tangible aid by local, provincial and Dominion governments in the shape of land grants, subsidies, guarantee of securities, and many exemptions from taxation. The Provinces of Alberta and Saskatchewan were formed out of the Northwest Territories in 1905, and before that time, and for some time afterward, practically the only corporations in these provinces were the railway companies, some of which, under their original charters, had special privileges in regard to taxation.[28] Under the Consolidated Ordinances of the Northwest Territories, as formerly constituted, those railways which were not exempted were liable in respect to the land occupied by them. Each company was required to make a return to the Council of the Territories as to its holdings of land and the value of its structures, and it was thereupon assessed at a maximum of $1000 per mile.[29] Under the Municipal Ordinance all real and personal property was taxable at the same rate.[30]

The new "prairie provinces" did not follow the methods of taxing railway corporations which were then in vogue in the older provinces, except to a limited extent. The personal property tax was left to the municipalities, as was becoming the practice in some of the states in the Union. The Dominion subsidy formed a large part of the revenues of these provinces, and the necessity for a diversified and elastic taxation system was not at first realized. As will be seen

[23] *Ibid.*, sec. 3.
[24] 45 Vict., c. 22 (1882).
[25] 7 Edw. VII, c. 13, sec. 8 (1907).
[26] R. S. Q., c. 31, secs. 2 and 3 (1925).
[27] R. S. Q., c. 26, art. 5, sec. X (1925).

[28] See James Mavor, "Canadian Methods of Taxing Corporations," National Tax Association *Proceedings* (1908), p. 604.
[29] Consolidated Ordinances, N. W. T., c. 71. In force September 1, 1905.
[30] *Ibid.*, c. 70.

below, in some respects the methods of taxing railway corporations in the west were distinctly in advance of those used in Ontario and Quebec, but the extent to which railways were granted wholesale exemption has robbed this potential source of income of most of its significance.

According to the terms of the Canadian Pacific charter, and as specified in the special act concerning the Company, the first transcontinental railway in the Dominion was granted complete exemption from taxation of stations, grounds, buildings, yards, rolling stock, and capital stock "by the Dominion, or by any Province hereinafter to be established, or by any municipal corporation therein; and the lands of the company, in the Northwest Territories, or until they are either sold or occupied, shall also be free from such taxation for twenty years after the grant thereof by the Crown."[31] This provision has substantially decreased the income from railway taxation of all the provinces, particularly those in the west, because of the predominance of this Company's lines. Although the Canadian Pacific Railway is by no means totally exempt from taxation, as Table I shows, the presence, side by side, of a specially treated private company and a publicly operated system, comprising together most of the mileage of the country, has deprived some of the provinces of what would otherwise be a substantial income.

The Canadian Pacific Railway is, of course, liable to income taxation by the Dominion Government and in 1926 paid $2,000,000 on this account. From January 1, 1918, until one year after the declaration of peace the Canadian Pacific Railway, by Order-in-Council, bore an additional tax of ½ its net earnings from railway operation in excess of 7% on its common stock up to $7,000,000 and an income tax on all earnings other than those from railway operation. These taxes were not exacted after 1919.[32]

In the Province of Manitoba, the original exemption of the Company obtained, but applied only to those portions of the main line which existed at the time of the chartering of the Company. For many years the Company enjoyed practically complete freedom from taxation, the original reason being the recognition of the tremendous obstacles which the promoters of the line faced from 1881 to 1885 in pushing construction of the main portions of the road through endless miles of practically unsettled and unoccupied territory. When the boundaries of the Province were extended in 1882, the same exemptions applied. At the present time, however, the Canadian Pacific, in lieu of taxation, pays to the Province of Manitoba a lump sum of $384,500 in accordance with an amicable arrangement that was arrived at some time ago, and will continue to pay this sum until 1930, when the matter will again come up for consideration.[33]

As an illustration of the aid given to this railway, Professor Innis, in his excellent account of its history, points out that the City of Winnipeg had granted the Company a bonus of $200,000, a free right of way, exemption of all its property from taxation forever, and the Louise Bridge, costing $250,000.[34]

[31] 44 Vict., c. 1. An Act respecting the Canadian Pacific Railway, February 15, 1881.

[32] See Harold A. Innis, *History of the C. P. R.* (London: T. S. King and Son, Ltd., 1923), p. 239, n.

[33] Letters from Deputy Provincial Secretary of Manitoba, October 23, 1928, and November 26, 1927.

[34] See H. A. Innis, *op. cit.*, p. 181. In all, the Canadian Pacific Railway and its subsidiaries had, by December 31, 1926, been made federal land grants of a total of 24,941,979 acres. (*Statistics of Steam Railways of Canada, 1926*, p. 12.)

The Canadian Northern Railway and its subsidiaries, built largely after 1900, was also granted aid in several ways by Dominion and Provincial administrations, but was never exempt from taxation in any form, being liable under the general provisions outlined below. But in 1917 it was taken over by the Canadian National lines, and its holdings are the property of the Crown.[35] Nevertheless, the Province of Manitoba receives annually from this source $175,000, which amount was paid prior to the acquisition by the Government and has been continued since that time.

The general provisions in Manitoba for taxation of non-exempt lines are quite different from those used in Ontario and Quebec. In this Province, prior to 1900, the railways, like other corporations, had been subject to municipal taxation only. In 1900 Manitoba followed Ontario with a Corporation Taxation Act[36] and a Railway Taxation Act,[37] the latter applying to steam railways only, and making railways subject to Provincial instead of municipal taxation, save in respect to their real estate.[38] This Act required all railways within the Province (except those especially exempted) to pay during the years 1900, 1901, and 1902, 2% on their gross earnings, and in each year thereafter such sum as might be determined by the Lieutenant-Governor-in-Council not exceeding 3% of gross earnings. No company has, up to the present, paid more than 2%. Railways are exempt from all other taxes except those imposed on land subsidies from the Dominion, on land held for sale, and the frontage tax for local improvements. Each railway is responsible for demonstrating the accuracy of the gross earnings figures for the Province, presented to the Provincial Treasurer. In view of the impossibility of segregating the earnings by Provinces, the amount of taxes payable in Manitoba, other than those paid by the large systems as mentioned above, is really a matter of agreement between the railway company and the Province, which has been theoretically fixed at 2% for the last 28 years, but which has always been arbitrarily determined.[39]

It is interesting to see the effect of individual bargaining upon the operation of what would otherwise have been a distinct improvement over the mileage system used in the east. This 2% rate on gross earnings was really the result of a bargain made between the Canadian Northern Railway Company and the Government, when the former was being encouraged to build lines throughout the Province. Accordingly, the same rate was made for all railways.[40] As the excellent report of the Manitoba Assessment and Taxation Commission of 1919 points out,

> ". . . on account of the Canadian Pacific Railway Company putting forth a claim that they could not be taxed upon earnings on portions of their lines outside of the original boundaries of the Province at the time when they obtained their charter, and contentions that the work involved in dissecting the revenues earned in the Prov-

[35] "Where the title to the properties is actually vested in the Crown, as in the case of the Intercolonial and the Transcontinental, no taxes are legally enforceable, since the provision of the British North America Act (Art. 125) clearly applies. In all other cases where the interest of the Crown is a stock interest by stock control, either in whole or in part . . . the title to the property remains in the Company, and the property is taxable by the provinces concerned."—Opinion of Gerald Ruel, K. C., General Counsel of the C. N. R., in J. H. Blumenstein, *The Taxation of Corporations in Canada*, McGill University Economic Studies, No. 3, pp. 32–33.

[36] 63–4 Vict., c. 55 (1900).

[37] *Ibid.*, c. 57.

[38] See A. B. Clark, *op. cit.*, p. 438.

[39] Letter from the Tax Commissioner, Canadian National Railways, November 29, 1927.

[40] *Report* of the Manitoba Assessment and Taxation Commission (1919), p. 98.

ince upon traffic emanating in . . . and passing through the Province, would be very difficult and expensive to compile, special arrangements were made with the Canadian Pacific Railways Company from time to time as their revenues and earnings increased, and in order to make the tax upon the C. N. R. Co. on an equitable basis with the C. P. R. Co., their line was also dealt with by special arrangement with the Government from time to time."[41]

The real results of Manitoba's distinctly better form of railway taxation have been largely nullified, but in spite of this the taxation of railway corporations by the Province, instead of by the individual municipalities, is a benefit generally, because of lack of uniformity in local assessments and rates, the essential unity of railway property, and the character of railway traffic. An additional improvement, that of a Provincial Tax Commission similar to the State Commissions in this country, was recommended by the Commission, which was appointed to inquire into actual and possible methods of assessment and to suggest improvements. The Commission believed that "a model system of assessment and tax reform should include the selection, length of engagement, remuneration, and general control and direction of municipal assessors by a capable central authority."[42] Like that of its predecessor in Ontario, the report of this Commission, containing as it does a remarkable survey and analysis of taxation theory and procedure, has had but little effect upon the system now in force.

The sister Provinces of Alberta and Saskatchewan were formed out of the Northwest Territories on September 1, 1905, and, as we have seen, were deprived of one of their chief sources of revenue by the exemption of the Canadian Pacific Railways. As Vineberg has pointed out, "unless it will be possible to devise a method of conforming the Company to the letter of the law and at the same time compelling the Company to contribute to the support of the Provinces, it is not likely that the railway will be taxed."[43]

In 1908 the Railway Act[44] was passed in Saskatchewan, stipulating a tax on gross earnings of railway corporations for Provincial revenue. It was hoped that the Canadian Pacific Railway would be reached in this way and forced to contribute. The Company, however, disputed the claim, but the provisions of its charter exemption applied only to the Company's lines as of 1881 and are not really applicable to subsidiary lines at present operated within the Province.[45] These lines have therefore been subject to taxation. The dispute with regard to the gross revenue tax has never really been settled, but in the meantime the Company has paid a Provincial tax which for 1926 amounted to $135,009.66.[46]

The Canadian Northern Railway, now a part of the Canadian National System, has become exempt from taxation under the Act of 1908 because its bonds and debentures were guaranteed by the Provincial Government. All other railway lines must pay such a portion of their gross earnings as shall be determined by the Lieutenant-Governor-in-Council, the rate not to exceed 3% for railways which have been in operation for seven years or more, and 1½% when in operation more than five years and less than seven.[47]

[41] *Ibid.* (Statement of the Provincial Treasurer.)

[42] *Ibid.*, p. 14.

[43] *Op. cit.*, p. 127. This railway is, however, decidedly not tax-free.

[44] 8 Edw. VII, c. 32 (1908).

[45] See Brown, *op. cit.*, p. 438.

[46] *Statistics of Steam Railways of Canada, 1926*, p. 173. (Dominion Bureau of Statistics.)

[47] R. S. S., c. 32, sec. 3 (1920).

Rate on Arbitrary Assessed Value. In the Province of Alberta we find again the system of municipal and provincial taxation, as in force in the Provinces of Ontario and Quebec. In Alberta, however, provincial taxation of railways is on neither a mileage nor an earnings basis. The Act of May 9, 1906,[48] provided for a provincial tax based on the "actual value" of each railway, which is to be determined by the Lieutenant-Governor-in-Council, and which is not to exceed, according to the Act, a valuation of $20,000 per mile, and the tax is 1% of this value. This practically amounts to a straight mileage tax of $200 per mile.[49] An Act of 1908 exempted all railways which have been in operation for less than seven years, and in 1909 $30 per mile was declared to be the maximum amount for railways which have been aided by a Provincial guarantee during the currency of the guarantee.[50] The burdens of the Canadian Pacific and Canadian National lines are, then, very light in this Province as in Saskatchewan.

The promised building of the Canadian Pacific Railway was the chief factor in bringing British Columbia into the Dominion in 1871. In fact, only the assurance of the completion of the road could have induced the people of that colony to become part of the Dominion, for the linking of the far west with the east by bands of steel, and the filling in of the central plain through the resulting immigration, was necessary for actual as well as for political unity. The economic importance of adequate railway facilities to British Columbia led to the same encouragement there in the shape of subsidies, security guarantees, and special exemptions, making the problem of railway taxation by no means simple.

British Columbia is the only Province which raises provincial revenue by taxes upon real estate. The nature of this tax is, however, not practically different from the straight mileage tax imposed in some of the other provinces. A special Act provides for the assessment and taxation of railways, under which each railway annually files with the surveyor of taxes complete data with regard to the number of lines of track of all kinds, exemptions claimed, land grants obtained, lands sold, etc.[51] A uniform valuation of $10,000 per mile of main lines and branch track and $3,000 per mile of subsidiary track is then taken and a 2% rate applied.[52] This is supposed to be a tax on real and personal property and income. The provisions for railway assessment do not apply, however, to property situated within the limits of any organized municipality.

Whatever may be the merit of this grouping together of right-of-way, personal property, income, and rolling stock and taxing it all on the basis of real estate by the Province, it is destroyed by the application of a uniform rate and assessment. As Professor Murray Haig pointed out in his valuable taxation report in 1919, "to tax railways . . . at the same figure per mile is so rough and inexact a method as to be acceptable only when the tax burden is insignificant. If the railways are asked to bear heavy taxes, a more equitable method than the present one should be applied to appor-

[48] 6 Edw. VII, c. 30 (1906).

[49] As a matter of fact, the value has been fixed at $11,935.34 per mile, and the 1% tax is paid on that amount.

[50] 9 Edw. VII, c. 5., sec. 10 (1909). See Vineberg, *op. cit.*, p. 128.

[51] R. S. B. C., c. 71, secs. 108–13 (1926–27). Original Act, 1907, c. 42.

[52] The rate was 1% before 1917. The first separate railway assessment act was passed in 1894, providing for an assessment of $3,000 per mile, and in 1908 the assessment was increased to $10,000 per mile.

tion the burden among the various companies."[53]

III. Local Taxation

Except in the case of British Columbia, the local jurisdictions alone tax railway real estate. No great divergence in nominal appraisal methods is to be found in the different provinces, where in each case provincial legislation has laid down the procedure of municipal assessment and taxation. Details of assessment, property included, and rates all vary, of course, in the separate provinces. In all the provinces, ratepayers may be required by assessors to furnish statements of taxable property, with usually a penalty imposed for rendering a false statement, and right of appeal to the local council or board of revision, and then to the county courts.[54] No political favoritism, no party connection, and no spoils system mar the efficiency of the Canadian assessors. Canadian municipalities have kept their local affairs free from party politics, and it is safe to say that, in the majority of cases, assessors are chosen for their ability to perform their duties efficiently rather than because of their party connections.[55]

Nova Scotia. In the local municipalities in Nova Scotia, railway property (privately owned) is subject to the property tax under the Assessment Act, which stipulates that "all property liable for taxation shall be assessed at its actual value, such value being the amount which in the opinion of the assessor it would realize in cash if offered at auction after reasonable notice."[56] This basis would certainly not make for uniformity of burden among the 66 municipalities of the Province.

New Brunswick. As far as municipal taxation is concerned, the Assessment Act of New Brunswick makes no special mention of railways. Only their real estate appears to be taxed by the localities through which they run, their rolling stock and personal property being exempt, as we have seen above.

Quebec. In Quebec the "immovable property" of the railway companies in the Province is taxable in each municipality under the Towns and Cities Act at actual value, that of land being estimated according to the average value of neighboring lands.[57]

Ontario. In Ontario local assessment and taxation of railway property has undergone very few changes. From the beginning each municipality has been responsible for the assessment of railway property, and every line is thus required to make very many payments, which bear little or no relation to the earnings of the line within the different local areas. In 1902, even before the report of the 1905 Commission on Taxation of Railways, a special Assessment Commission had been appointed "to inquire into and report upon questions of municipal assessment and taxation in the Province," but its recommendations met the same fate as did those of the later report. At that time (1902) the general property tax was levied on both real and personal property, though most corporations, including railways, were exempt from taxes on personal property. They were taxed only on the land owned by them, valued according to the average value of the land in the locality.

The Assessment Commission made a thorough study of the existing methods of municipal taxation and uncompromisingly condemned the general property

[53] *Reports* of the Board of Taxation appointed under the Provisions of the Board of Taxation Act of 1917, (submitted March 1, 1919), p. 113.

[54] See Vineberg, *op. cit.*, p. 93.

[55] *Ibid.*, p. 90.

[56] R. S. N. S., c. 86, sec. 16 (1923).

[57] R. S. Q., c. 102, sec. 489 (1925).

tax. Its conclusions were based on opinions of leading tax economists of the time, on the reports of the American State Tax Commissions on the subject, and on the experience with the system in Ontario, where, as was generally conceded, it not only failed to reach intangible property but subjected some persons to double taxation.[58] The Commission recommended the abolition of the personal property tax and the substitution of an income tax system to be extended to corporations and persons alike.[59] With regard to railway and other quasi-public corporations, the Commission recommended the appointment of a provincial board to assess the lands of railway companies, the income of express companies, and the special franchises of other persons, the tax to be paid to t provincial treasury and distributed among the various municipalities concerned. This would have been a logical step toward more equitable taxation of those corporations which had earning properties spread over many municipalities. But, aside from the elimination of roadbed from local assessment, little has been done to bring into effect the recommendations of either Commission for relating the railway tax burden to earnings, or making uniform the tax basis in all municipalities, or centralizing supervision and administration. At the present time each municipality assesses and taxes the railway property (aside from the roadbed) within its jurisdiction, the land at "actual value" according to the value of land in the locality, with railway assessments every four years.[60] Actual value varies from place to place, as does the rate on that value.[61] A later article will deal with the actual distribution of the tax burden.

Manitoba. In Manitoba the lands of the railway companies are subject to municipal taxation for municipal improvements only, but the railway companies are obliged to file returns of their properties at actual cash value with the clerks of the municipalities annually, showing all exemptions claimed.[62] Railway lands not actually used for railway purposes are subject to municipal taxes and are assessable in the same manner as other than railway lands.[63]

In cities, towns and villages lands are assessed at the "full value" and buildings at ⅔ of full value. The value of both is ascertained separately and is set down separately in the assessment roll, then added together.[64] No instructions are given as to what standards shall be used as a basis for determining "full value", except that "market value" is the basis to be used.

Saskatchewan. In the municipalities of Saskatchewan, as in Manitoba, railway companies are exempt from all taxation other than for local improvements. For such purposes, railway property is assessed at "actual value," determined locally, with a maximum assessment of roadway and superstructure of $1,000 per mile.

Alberta. Municipalities of Alberta assess all railway lands and improvements for school and municipal taxes on the same basis as they assess all other property owners. These assessments are made by the various school and municipal districts through which a railway runs, and the rate of taxation is governed by the requirements of each individual district, the assessment being

[58] *Report* of the Ontario Assessment Commission (1902) pp. 8–15.

[59] *Ibid.*, p. 35.

[60] Assessment Act, R. S. O., c. 239 (1927).

[61] However, separate valuation of land and buildings is provided for, to aid the assessors in making a closer comparison of land values.

[62] Assessment Act, R. S. M., c. 134, secs. 51–2 (1924).

[63] R. S. M., c. 193 (1913).

[64] C. S. M., c. 134, sec. 29 (1924).

on the actual value of the property with, however, the provision in favor of the railways of a maximum assessment of $1,000 per mile of right-of-way. Buildings are assessed separately.[65] The growth of the single tax movement, resulting in the exemption of improvements from local taxation in most of the localities of Alberta, has been an added factor in lightening the railway tax burden in that Province.

British Columbia. In the organized municipalities of British Columbia the railway right-of-way is taxed for municipal purposes on the basis of "actual cash value," that is, the "true cash value of land . . . at which the land would generally be taken in payment of a just debt from a solvent debtor."[66] Just how this value is to be determined is left to the individual assessors in the different municipalities.

A Board of Taxation, appointed in 1917, made a thorough study of assessment and taxation in the Province, drafted a proposed taxation act (the provisions of which have been generally followed), and included a study and list of recommendations by Professor Murray Haig of Columbia University. His most significant proposal was for the appointment of a permanent Tax Board similar to those in use in many of the states in this country, which board would be "cut clear as far as possible from all political and special interests."[67] In the 1917 session of the Provincial Legislature such a Board was created to consist of three members to advise the Minister of Finance on all matters relating to taxation. The Board was to "make any recommendations bearing on the revision of the tax laws with a view to bringing the system of British Columbia up to the best standard."[68] Before this Board could function, however, the statute under which it was brought into existence was repealed by the "Obsolete Statutes Repeal Act, 1922.[69] Thus ended a significant forward step in taxation administration. It must be said in fairness, however, that this Province has made the most progress in corporation taxation in general by adhering to taxation of gross earnings as a principle. This action is in refreshing contrast to the bewildering variety of tax bases in other provinces.

Summary

The above survey of railway taxation methods in Canada suggests the following comments or conclusions which seem to the writer to be significant:

1. The lack of uniformity in the provincial tax systems is unfortunate for both railways and taxing bodies. The former are obliged to pay, except in Manitoba and Saskatchewan, taxes which bear no relation to their earnings as a whole, nor to the earnings within the limits of the different provinces. Even though all provinces were to tax the roads on their earnings, such earnings would be almost impossible of apportionment among the provinces, except for the shorter roads which do not carry much inter-provincial traffic. The majority of the provincial levies are thus not based on any ability-to-pay principle, and the railways consequently cannot bear their just proportion of the expenses of government, although individually and collectively they may be paying too much or too little. This throws a greater or a smaller tax burden upon other individual and corporate taxpayers in the province. The straight mileage tax,

[65] Letter from Right of Way and Townsite Agent, Alberta & Great Waterways Ry. Co., December 2, 1927.

[66] R. S. B. C., c. 48, sec. 30 (1928).

[67] *Report* of the Board of Taxation, p. 20.

[68] Board of Taxation Act, 7–8 Geo. V., c. 64 (1917).

[69] 13 Geo. V, c. 71 (1922).

used in four provinces, is particularly inequitable, being neither elastic, flexible, nor proportional as between the various lines. The western provinces are to be commended upon their avoidance of this older method, having learned from experience of states in the Union; and British Columbia, which taxes all corporations on their gross earnings, ought to apply this method in fact and not in theory only, to the railways. The recommendations of the Ontario, Manitoba and British Columbia Commissions have not lost their merit.

2. Railway taxes were imposed, for the most part, simply to add to the provincial revenues as the need for more funds increased with the growing responsibilities of the provincial governments. Taxes were imposed which were easy of calculation, application, and collection. Little thought has apparently been given to more important principles of sound public finance. Corporation taxes are presumably levied on an ability-to-pay basis in order to reach the growing amount of corporate property and intangible wealth which was escaping taxation under the general property tax. But in most provinces no such theory has been applied. Perhaps the growth of the business tax has been partially responsible, but since railways are taxed specially this does not apply to them.

3. The Dominion Government subsidy paid to the provinces comprises a large percentage of their annual revenues. This payment has no doubt been of great significance in the relief of corporations from taxation based on earning power, because pressure of fiscal expense has not necessitated close scrutiny of the taxation systems in the provinces and the formation of a system which will bring out the maximum revenue with the least effort.[70] As has been pointed out above, this division of collection and distribution of funds is not sound public finance, and though it may have been necessary while the provinces were in the early stages of their economic development and had small sources of revenue, now each province should stand on its own feet as far as its own expenses are concerned.

4. Taxation of the railways' real property in the multitude of local jurisdictions is subject to much the same criticism. Exemption has been generally prevalent in the case of the publicly owned lines. Railway properties as earning units should be dealt with as a whole, not piecemeal by the municipalities or provinces through which their lines operate, and the time-honored criticisms of the general property tax are particularly applicable in this connection.

5. To get uniform assessment in the different localities, uniform rates on those assessments, and a fair distribution of the roads' fair share of the tax burden, some sort of a central body, as suggested by the Ontario Commission in 1905 and by Professor Haig in 1917, should be set up. As we have seen, such a system has been tried in British Columbia only, and that was not permanent. Certainly the efficacy of such bodies has been amply demonstrated by the more successful of the state tax commissions in the United States.

6. The extent to which exemption and government ownership have made inroads upon the potential revenue-raising powers of the provinces and municipalities will become more apparent in the subsequent article in which an analysis of the actual tax burden of the rail-

[70] In 1926, of the total ordinary receipts of the 9 provinces, amounting to $146,450,904, a little over 10%, or $14,500,356, was contributed by the Federal Government. (*Canada Year Book, 1927–28*, p. 840.)

ways in comparison with that of the United States will be presented. Suffice it to say now that, with the passage of the period of growth and expansion of railway facilities, the continuance of special exemption only throws part of the railways' share of public expense upon other individuals and corporations and prolongs an unfair distribution among the railways. But with almost half of the railroad mileage in the Dominion under Government operation and unable to meet all its fixed charges, and with important exemptions by charter of over ⅔ of the remaining mileage, the possibility of a change in this direction is not promising.

No conclusions as to whether or not the railways are being taxed heavily enough may be made at this time. Whether the proper tax burden of the railways should be more or less than at present can be decided better after a close scrutiny of the data.

THE BACKGROUND OF LABOR RELATIONS OF PUBLIC UTILITIES

By E. W. MOREHOUSE

NOWHERE in the literature or trade periodicals of public utilities do we find any statement of the general nature of employer-employee relationships in public service industries.[1] Most of the material concerned with this type of economic relationship deals with certain minutiae of practical policies of labor administration. There is room, it would seem, for stating some of the more general considerations that tend to set the labor bargains of public utilities somewhat apart from similar relationships in private industries. Particularly is this desirable for a group of industries whose other economic relations place them legally in a class by themselves.

The purpose of this article, therefore, is merely to give a picture of the setting of employer-employee relationships in public service enterprises. In order to place the labor bargain in its proper perspective, it is desirable to think of it in connection with the other transactions into which a utility enters in the course of business.

Pecuniary Importance of the Labor Factor

From the quantitative standpoint this may be done in two ways: (1) By dividing the annual inflow of operating revenues into the separate streams that go to wage earners, bondholders, stockholders, sellers of materials, taxpayers (Tables I and II); (2) By dividing similarly the annual outflow of operating expenses required to produce the revenues (Tables III and IV). These ratios indicate in general the relative pecuniary importance of wage-earning labor in the economy of the several types of utilities. They show, for example, that the labor factor is of predominant pecuniary importance in all the utilities except electric and gas.[2] From 10% to 50% of the flow of revenue is transformed into wages; from 15% to 65% of operating expenses consists of compensation to manual workers.

Despite the magnitude of the labor item, it is likely to be scrutinized less closely by regulatory officials than is any other revenue share or expense item. Why? For an answer we have to delve into economic history practically as far as in seeking the genesis of the peculiar system of rights and duties in which public utilities function. But without tracing the devious path from slave labor to the system of free labor,[3] it will suffice to point out that modern economic society recognizes in general that efficiency and willingness to work are closely associated. We have reached the stage where legally, to a certain extent economically, and to a large degree customarily, a worker may begin or quit work at will. Liberty of contract between employers and employees, in brief, results in greater productive efficiency and social advantage. This legal doctrine and the customs and statutes

[1] The best condensed general analysis of public utility labor relations is found in Glaeser, *Outlines of Public Utility Economics* (New York: Macmillan Co., 1927), Ch. 23 and 24.

[2] If adequate data were obtainable for water utilities, these would doubtless be classed with the electric utilities.

[3] See, for illustration, Harry M. Cassidy, "Emergence of Free Labor Contract in England," 18 *American Economic Review* 201 (June, 1928).

TABLE I. APPORTIONMENT OF OPERATING RECEIPTS.*

	1922				AVERAGE 1902–1922			
	Labor†	Investors	Material Men	Government	Labor	Investors	Material Men	Government
Steam Railways	46.5%	20.6%	27.5%‡	5.4%	42.5%	29.5%	23.9%	4.1%
Electric Railways	43.8	22.1	27.7	6.4	37.7	39.9	24.6	5.8
Commercial Light and Power	20.7	37.4	34.1	7.8	21.0	38.3	33.3	5.4
Telephone	53.6	36.0	3.1	7.3	44.6	41.7	7.6	5.2
Telegraph	50.1	21.1	24.3	4.5	39.2	29.1	28.9	2.8

* Based upon Census returns. This compilation is taken from Glaeser, *op. cit.*, p. 110.
† Includes wages and salaries.
‡ Includes some other operating expenses.

which are its basis and expression form the institutional foundation of employer-employee relations in both private and public service industries.

General Peculiarities of the Labor Relations of Utilities

This common institutional setting of labor relations does not, however, make the labor problems of utilities identical with those of private industries. The explanation of this apparent paradox throws light on all utility labor problems. If the relations between utility managers and employees could be isolated from all the other relations into which these managers enter, we might then say that the labor relations of utilities, in so far as they have a common legal foundation with those of other industries, were not different. In this isolated sphere, the managers of a utility are practically subject to no greater legal restraints in dealing with employees than are the managers of a steel plant.

What distinguishes the labor relations of utilities is the peculiar obligations imposed on utility managers in their *other* relations. These obligations are well known. They are evidenced by the degree of governmental interference in, and scrutiny of, all the other revenue shares and expense items which were indicated above. A utility's duty toward consumers, for example, is to render continuous and reasonably adequate service at reasonable rates and without unreasonable discrimination. In return the utility has been assured the right to demand that consumers give, through rates, a sufficient flow of revenues to permit the enterprise to perform its duties. In enforcing these reciprocal rights and duties public officials have extended the sphere of their control over all the other relations of a utility's managers, except those with labor. By contrast, the wage-earning employees of utilities have practically no legal obligations to consumers, owners, or investors. Under ordinary circumstances, no legal obligation rests on employees to give continuous service

TABLE II. RATIOS OF WAGES TO TOTAL OPERATING REVENUES OF PUBLIC UTILITIES BY CENSUS YEARS, 1902–1922*

TYPE OF UTILITY	YEARS				
	1902	1907	1912	1917	1922
Steam Railways	39.1%	41.4%	44.0%	43.3%	47.5%
Electric Railways	32.2	32.1	29.8	32.0	37.0
Electric Light and Power	17.2	13.1	11.8	10.7	11.5
Telephones	30.5 †	26.8 †	24.9 ‡	33.0 ‡	37.7 §
Telegraphs	.....	.....	.....	.....	32.76
Gas	13.7 ¶	12.5 ¶	12.1 ¶	16.1 ¶	.....

* Based upon statistics from the Interstate Commerce Commission and the Bureau of the Census. See unpublished thesis by John D. Sumner, "A Survey Analysis of Public Utility Expenses," Northwestern University, 1926, and compare Glaeser, *op. cit.*, p. 525.
† Figures for 1902 and 1907 include mutual as well as commercial companies.
‡ Figures for 1912 and 1917 include only companies reporting incomes of more than $5,000.
§ Figures for 1922 include only companies reporting incomes of more than $10,000.
¶ Figures are for Manufactures Census years, 1904, 1909, 1914, 1919, 1924. Ratio of wages to "value of product."

at reasonable wages. But, in theory at least, management cannot escape its obligations. Thus the managers of utilities face the difficult task of developing an attitude of mind among employees that will produce results equivalent to those required by this legal obligation, for only as they succeed in doing this can they meet their own obligations to consumers. This is the attitude of management.

But what of consumers? From their standpoint is there anything distinctive in the labor situation in public utilities? This question also may be approached from the standpoint of obligations. Consumers' interests in continuous service and reasonable rates tend to make them attach to labor a moral obligation to refrain from strikes and unreasonable wage demands. Moreover, a strike on a public utility is almost certain to attract wide publicity and appear to affect consumers' interests more directly than in the case of a private industry. These features arise from the inherent nature of public utilities as a class, since one of their distinguishing characteristics is a high degree of consumer dependence on their services. To this characteristic chiefly may be attributed the tendency of consumers to criticize strongly sometimes the company and sometimes the workers for any interruption of service on account of strikes or for rate increases occasioned by higher wages.

TABLE III. RATIOS OF WAGES TO OPERATIVE EXPENSES OF PUBLIC UTILITIES BY CENSUS YEARS, 1902–1922*

TYPE OF UTILITY	YEARS				
	1902	1907	1912	1917	1922
Steam Railways	60.5%	61.3%	63.7%	61.4%	59.8%
Electric Railways	57.76	54.94	52.50	51.55	53.34
Telephones	47.31 †	42.45 †	37.70	48.09	53.82
Telegraphs	.....	.....	.....	.....	41.92
Electric Light and Power	28.82	23.99	22.05	18.82	20.22
Gas (Mass.)	15.2	16.6	14.5	15.2	14.9 §
Gas, Mfd. (U. S.)	23.3 ‡	22.2 ‡	19.9 ‡	20.4 ‡	.....

* Data for steam railways compiled from Interstate Commerce Commission reports; for electric railways, telephones, telegraphs, electric light and power and manufactured gas from reports of the Bureau of the Census; for gas utilities in Massachusetts, from reports of Gas and Electric Commission and Department of Public Utilities in that state.

† Figures for 1902 and 1907 include operating expenses of mutual as well as commercial companies.

‡ Ratios of wages to cost of materials plus rent, taxes and salaries and wages. Figures are for Manufactures Census years, 1904, 1909, 1914, 1919, 1924.

§ Figure for 1921.

TABLE IV. RATIOS OF WAGES TO OPERATING EXPENSES OF GAS UTILITIES IN MASSACHUSETTS, 1900–1921*

Year	Ratio	Year	Ratio
1900	16.2%	1911	15.2%
1901	15.0	1912	14.5
1902	15.2	1913	14.5
1903	15.3	1914	14.7
1904	14.4	1915	14.4
1905	14.5	1916	15.0
1906	17.2	1917	15.2
1907	16.6	1918	15.0
1908	16.4	1919	15.6
1909	16.5	1920	17.4
1910	15.8	1921†	14.9

* Data computed from Reports of Gas and Electric Commission and Department of Public Utilities, Massachusetts.

† Publication of statistical reports of Department of Public Utilities was discontinued after 1921.

This attitude of mind among consumers has not been ignored by trade union leaders. Fundamentally it probably accounts for the fact that many officials of trade unions in the utility field have come to realize that in strikes they are handicapped from the beginning by having to overcome a more or less instinctive public resistance.[4] Accordingly, the Amalgamated Association of Street Railway Employees requires arbitration before resort to the strike weapon and most unions in the utility field seek first to attain their ends by other means than an interruption of work. Thus the pressure of public opinion, reflecting consumers' attitudes, has tended to substitute the counsel of expediency for either a legal prohibition of strikes or a free use of the strike

[4] A recent illustration is the "postponing" of the Pullman car porters' strike call. President Green of the American Federation of Labor is reported to have advised: "Economic conditions are not favorable to the success of a strike now. Public opinion has not been crystallized to approval of your demands." (*Chicago Tribune*, June 8, 1928, p. 1).

threat as an aid to bargaining. In other words, in addition to management's attempts to set up a moral obligation of labor to remain at work, public opinion likewise erects a similar moral obligation. The two together have the effect of providing a psychological setting which makes bargaining for wages or working rules on utilities different at least in degree of difficulty, if not in kind, from similar bargaining in private industries.[5]

Another aspect of wage bargaining which tends to distinguish labor relations on utilities may be described as "the burden of proof." The managers of a utility, representing the stockholders, are in a position to counter-attack a demand for a wage increase by saying: "The return to stockholders is limited. Your request for increased wages can only be met by increased rates. The regulating commission must decide whether consumers may be called upon to pay higher rates." This inability-to-pay argument has interesting and significant results that can be seen in almost any arbitration of a public utility labor dispute. (1) It transfers the burden of proof from the employer to the workers who thereupon fall back upon the standard of living argument which is the usual defensive argument against a reduction of wages, much as the cost of living showing is usually an offensive weapon for higher wages. When increased wages are demanded in private industry, ordinarily, or in times of rising prices at least, the employer is the one who has to justify a denial of the increase. In the case of utilities, however, labor generally has not only to justify its own demands but also to prove the employers' ability to pay.[6] (2) The

[5] On logical grounds, a plausible argument may be made that collusive agreements between public utility managers and employees are more likely than in other industries subject to greater competition, particularly when the employees' organization includes only those on the company payroll. Some of the utilities are substantially protected from competition; consumers are virtually dependent on continued service regardless of cost; under normal circumstances a utility may count upon permission to charge rates which will at least yield operating expenses plus some return on the investment; the commissions' practice of avoiding interference with labor relations weakens the check upon operating expenses which such scrutiny affords in the case of other types of expenses; hence the burden of higher wages may easily be passed on to consumers. So runs the argument.

Collusion in labor bargaining is difficult to prove or disprove, for it is usually under cover. It can never be proved by logic. In the writer's opinion, the presumption is against such collusion on the utilities. For one thing, collusion ordinarily implies close and disciplined organization on both sides and this is lacking for the most part except on the transport utilities. Again, utility employees as consumers of utility services are as dependent on such services as other consumers. Moreover, regulating commissions have the power to scrutinize and publish their suspicions of collusion if that appears probable from the facts in a case, even though they may not order directly a reduction of wages. Finally and most important, utilities in both their labor and consumer relations are not as free from competitive influences as is ordinarily inferred from their monopolistic organizations; rates and wages have economic limits just as other prices do. Indeed, even a cursory examination of wage rates and earnings in utility and non-utility employments will reveal no clear, objective test of the presence of collusion against consumers' interests.

[6] Moreover, in accepting the burden of proof, spokesmen for labor may be further handicapped by inability to obtain the information needed which is largely in the hands of the companies. The secrecy with which many company officials surround much of the data bearing on labor relations is well known. This policy is likely to prove more embarrassing to employee representatives in an "inside" union than to spokesmen for members of an "outside" union. In addition, the expense of arbitration proceedings is an item of importance especially for groups of employees without large funds. The incidence of these expenses is not subject to safe generalizations. Superficially considered, these expenses are met entirely out of wages of the unionized employees involved, whereas the company's expenses in arbitration or litigation are included in operating expenses which in the long run are met by consumers. But under some circumstances the workers' burden of expenses may be shifted to stockholders or consumers through higher wages, and the management's arbitration expenses may be reflected in reduced net earnings (and dividends) for the year in which the expense was incurred. The exact ultimate burden of arbitration expenses can only be determined by careful study of each case.

burden of proof may be even heavier under some circumstances. In asserting management's ability to pay labor's spokesmen may be put in the position of challenging the effectiveness of regulatory agencies. To prove that the company can pay higher wages without increasing rates implies that regulatory officials have not kept returns to stockholders down to reasonable levels. Thus under some circumstances those who demand wage increases may find themselves arrayed not only against the stockholders of the company but also against public officials whose administration of their duties is called into question, to say nothing of consumers whose interest in low rates is immediately affected. That these considerations increase the difficulty and limit the scope of wage bargaining will be attested by many participants in arbitrations of public utility wage disputes.[7]

These general considerations may be summarized in the statement that labor bargains in public utility industries differ from similar relations in private industries chiefly in the blending of liberties and duties and the psychological consequences of this blending. The system of free contract, which, in legal theory at least, characterizes employer-employee relations generally, is necessarily modified in practice by the duties imposed on utility managers and indirectly transferred to a certain extent to their employees. To this blending of legal and moral compulsion and freedom may be attributed most of the peculiarities of utility labor relations.

In addition to these general features, certain other factors stand out in a comparative survey of labor on utilities and in private industries. These may be grouped conveniently under three heads: (1) Technological factors; (2) Business or market factors; (3) Social factors. The lines of division among these three groups are frequently very dim and blurred, but the distinctions may help to paint a clearer picture of the environment in which dealings between utilities and their employees take place.

The variety of tasks in rendering public utility services is so great that generalizations about them are especially liable to exceptions. For this reason it is important to keep in mind a rough classification of jobs. A statement that may be true for employees engaged in moving trains may not apply to the employees who work in the shops. Some jobs are more affected than others by changes in technology; business or market developments may destroy some jobs, minimize the importance of others, or create new ones, and the effects of one type of business change may differ markedly from the effects of another sort of change. For example, should train crews refuse to move trains, the effect upon passengers or shippers would be felt immediately, but if the shopmen should strike, the effect upon patrons would not be immediately apparent. This suggests the need for separating those employees engaged in moving trains (transportation employees) from those engaged in maintenance work, whether of way and structures or equipment and stores. Moreover, for some

[7] Three recent cases under the Railway Labor Act illustrate the above statements: (1) *Chesapeake and Ohio System Federation No. 41, Railway Employees Department A. F. of L. v. C. & O. Ry. Co.*, U. S. Board of Mediation, Docket C-251 (1928); (2) *Brotherhood of Locomotive Firemen and Enginemen v. Certain Western Railroads* (Western Firemen's Case), U. S. Board of Mediation, Docket C-266 (1927); (3) *Re* Brotherhood of Locomotive Engineers, Brotherhood of Locomotive Firemen and Enginemen, Order of Railway Conductors, Brotherhood of Railroad Trainmen and Kansas City, Mexico & Orient Railway System, *Report of Emergency Board*, U. S. Board of Mediation, Docket CI-347 (1928).

purposes even the transportation group may have to be separated further into train and engine service (road engineers, firemen, conductors, trainmen, yard engineers, switchmen, etc.), track operations (such as towermen, telegraphers, gatemen, and flagmen), and station service (such as station agents, ticket agents, freight handlers). These jobs present differences among one another, just as, considered as a group, they differ from either the maintenance group or the 200,000 or more clerks, draftsmen, or other professional, official and office workers.

The electric railways furnish another illustration of the importance of job-classification. This industry has experienced difficulty in marketing its services at a profit. One result has been intensified pressure to reduce unit operating expenses. One-man cars have been introduced. What have been the effects on labor of these related business and technological developments? One-man cars have merged the duties of conductor and motorman and have tended to reduce the number of such jobs per unit of service. But they have not appreciably altered the duties of the shopmen who maintain the equipment, the men who maintain the way and structures, or the office employees. Yet the slowing up of electric railway traffic expansion may have started a cycle of influences resulting in stiffened resistance to wage changes affecting practically all classes of employees, though in differing degrees.

Similarly in other utilities the variety of tasks necessitates classification. Power house employees in the electric industry do not perform their duties before the eyes of patrons but their work is more vital to continuous operation than that of a meter reader who daily comes into contact with customers. Consider also the work of "distribution" employees as distinguished from power house or "generation" employees. Should a breakdown in service occur, the difficulty is far more likely to be found in the distribution line than in the generating station itself. The work of linemen who make emergency repairs under these circumstances becomes of very great importance to consumers whose supply of electricity is shut off, far more important indeed than the very similar work of linemen merely engaged in constructing a new transmission line. This suggests the necessity of separating distribution employees engaged in maintenance work from those engaged in new construction. Finally, in the electric and gas industries particularly, the activities of so-called commercial and sales employees, such as meter readers and appliance salesmen, have a more than ordinary importance in the industry's functioning.[8]

I. Technological Factors

Bearing in mind these general differences among utility jobs, some of the technological factors affecting the type of work, and through this the type of worker needed, may be reviewed. The following technological factors appear particularly striking: (1) the dominance of the machine technique; (2) the peculiar union of the machine technique and personal service; (3) and the dispersion and decentralization of productive activity.

1. *The Machine Technique.* It is commonly observed that utilities have a large and increasing amount of capital investment per worker (Table V). This indicates a rather pronounced influence

[8] Similar groupings of telephone, telegraph and gas industry employees will suggest themselves to the careful reader. In all utilities a large proportion of the work is clerical and office work of one sort of another.

of machinery on the job—on all sorts of jobs including even some phases of office work. Sometimes this influence of new machinery is good and sometimes bad—from the employee's standpoint: it may lighten his load,[9] or increase his responsibilities, reduce him to the ranks of the unskilled, or displace him from a job altogether.[10]

TABLE V. VALUE OF PLANT AND EQUIPMENT PER EMPLOYEE, BY TYPES OF UTILITIES AND BY CENSUS YEARS, 1902–1922*

TYPE OF UTILITY	YEAR				
	1902	1907	1912	1917	1922
Steam Railways	$8,961	$7,792	$9,324	$10,086	$12,650
Electric Railways	15,398	16,428	16,272	17,421	16,823
Commercial Light and Power	16,643	23,028	27,423	28,997	29,616
Telephones	4,943	5,690	5,897	5,873	7,335
Telegraphs (land and cable)	5,852	7,492	4,955	3,759	4,759

* Values are not corrected for changes in prices. Data for steam railways are taken from Interstate Commerce Commission Reports and for other utilities from Special Census Reports.

With the exception of certain occupations on transport utilities, this wide use of machinery does not usually have the result noted in other industries; namely, forcing the worker to adjust himself to the pace of the machine. Public utility services are not generally suited to a conveyor system. By and large, the machinery in non-transport utilities is of the automatic type and requires only intermittent labor. Even in the transport utilities the increased size of units of equipment is often accompanied by new labor-saving devices.[11] Though the substitution of mechanical contrivances for handwork has made utility jobs easier on the whole, nevertheless it has added to the responsibilities of some workers and under some circumstances it has also tended to displace labor. To the workers this has meant the loss of property in the form of skill or jobs.[12]

On the other hand, the dominance of the machine technique necessitates recruiting a labor force which has a relatively high proportion of technical talent.[13] The need for technical information, more than mere rules-of-thumb, extends even to occupations ranking fairly low in the scale of utility jobs. This aspect of the influence of technology on the type of workers needed by utilities is too patent to require elaboration.

2. *The Peculiar Union of Machine Technique and Personal Service.* Personal labor at the point of being served and the inability to accumulate reserve supplies for customer demands are two technological characteristics of utilities that set this group of industries somewhat apart from other business enter-

[9] The automatic stoker lightened the locomotive firemen's work after lengthened trains and larger locomotives on some railroads had made his job almost unendurably back-breaking.

[10] Not every new machine is an unmixed good from labor's point of view, though management may welcome the reduced unit costs. The steam shovel has transformed ditch-digging from a job requiring muscle to a job requiring mechanical deftness and has displaced thousands of ditch-diggers.

[11] Even when the introduction of machinery does not displace labor from public utility employments, it tends to weaken labor's bargaining power by restricting alternative opportunities of employment outside the utility field. Machine production in general puts a premium on the quick reactions which characterize youth, and has a tendency to shorten the most remunerative period of a worker's life. Hence, the longer a man remains in a public utility job, the less favorable become his chances of securing remunerative employment in other occupations.

[12] One-man cars have raised this issue among street railway operators and the duplex automatic telegraph printing machine has similarly agitated the telegraphers—to mention only two illustrations.

[13] One reflection of this is the prominence of technical courses for employees offered by many utility companies as part of their industrial relations activities. For another bit of evidence compare the technical departments of such labor periodicals as the *Electrical Workers Journal* and the *Locomotive Engineers Journal* with the material appearing in non-utility labor papers.

prises.[14] What do these two characteristics, *taken together*, mean to the workers?

When service must be given at the instant of demand and such service requires a large labor force at the point of service, jobs cannot easily be adjusted to the convenience of workers. The peak load of service requires a peak labor load with a lay-off for these employees during the off-peak period.[15] This is particularly striking in the case of operating jobs on railroads, [16] street railways, telephones and telegraphs.

The identity of the points of production and of consumption also makes certain classes of employees potential advertisers for the company. Ordinarily in factory employment the workers are never known to consumers of the products of their labor. But in the case of utilities these contacts between producers and consumers are many and varied. Within the past few years the managements of various utilities have recognized that these contacts may be a source of strength in cultivating a community opinion favorable to their interests. Many of them have urged the slogan to employees, "To the public you are the company." The expectation is that employees who are conscious of this fact are more likely to be courteous and considerate in their dealings with customers and thus to create a public goodwill that serves not only as a buffer when the company is criticized but also as an aid in customer financing.[17] One result of this policy is that a utility will introduce a public relations test in selecting employees for those jobs which are before the public eye.

Another angle of these close contacts between producers and consumers is the relation between employees' work and public safety. In a great many factory employments the individual's work has rather slight influence upon the safety of those who consume the products or of the general public. But in the case of utilities, particularly those engaged in transport service, employees have a heavy responsibility for the safety of patrons and the general public.[18]

[14] This statement does not apply, of course, to gas and water utilities whose product is a storable commodity enabling the utility to avoid a peak labor load in order to meet peak demands. For this reason these are sometimes referred to as *product* utilities as distinguished from the *service* utilities of transport and communication. Electric utilities seem to occupy a middle position. Electricity cannot economically be stored in advance of demand, but, once the equipment is in place, practically no personal labor at the point of being served is required. Automatic switching of telephone calls and automatic sending of telegraph messages are tending to make a considerable portion of the service of communication like electric service as far as these characteristics are concerned.

[15] In addition to irregular daily or weekly employment, other consequences are more closely related to business and social factors considered later.

[16] See, for example, the following analysis of time spent by Australian locomotive engineers on various duties. This analysis was submitted in the recent 42-hours case before the Australian Commonwealth Court of Arbitration. *Locomotive Engineers Journal*, May, 1928, pp. 334, 335.

THE SHORTER WORK WEEK ON AUSTRALIAN ROADS
Locomotive Drivers (Engineers)

	Hours	Per Cent. Total Time
1. Total time on duty of all drivers	152,106	....
2. Time of drivers on shed duties	4,684	3.1
3. Time of drivers travelling as passengers and waiting	13,040	8.6
4. Intervals at out-stations between periods of duty	4,160	2.7
5. Standing time of trains	24,654	16.2
6. Shunting	28,909	19.0
7. Attending enquiries, examinations, conferences, etc.	1,042	.7
8. Engine requirements	27,763	18.2
9. Running time between stations	47,853	31.5

Electric Drivers (Motormen)

1. Preparing and putting away trains—8% of the total time.
2. Signing on and off and waiting—14% of the total time.
3. Interval time at terminals—14% of the total time.
4. Meal time (paid for)—6% of the total time.
5. Shunting—6% of the total time.
6. Standby time and lectures—5% of the total time.
7. Actually running trains—47% of the total time.

[17] Of similar import is the policy of one large utility serving a wide territory to hire only persons who live in the communities served. Moreover, some railroads on the basis of harmonious labor relations have used employees to attract shippers from rival lines.

[18] "The very nature of their (locomotive engineers) service, involving as it does the custody of human life,

(*Continued on page 283*)

Failure of management to have regard for this factor has often resulted in heavy accident expenses to say nothing of public ill-will and loss of confidence. Control of this factor requires selecting employees who are physically fit, have a well-developed sense of responsibility and good judgment and are careful in the work that they do.[19] In recent years realization of this safety problem, stimulated doubtless by the general safety movement in industry, has prompted many utilities voluntarily[20] to introduce physical examination of prospective employees and periodic tests of those already engaged. Such a policy is, of course, not confined to utilities but in these industries it has on the whole greater significance to consumers than in private industries whose operations do not so directly involve public safety.

3. *The Dispersion and Decentralization of Productive Activity.* Associated with these features of utility services is the characteristic dispersion or decentralization of productive activities. Though the mobile work place is most peculiar to operating jobs of transport enterprises, a certain amount of decentralized production is found in other utilities. The rendering of gas, electric and telephone service, in the larger communities at least, does not all take place under one roof. Telephone exchanges, gas works, and electric generating stations may be located in different sections of the city. Moreover, the company's property occupies myriad rights of way to consumers' premises, which necessitates roving workmen when repairs or installation changes are made. All these features of utility operations, summed up in the phrase "dispersion of production," aggravate the problems of discipline, supervision and efficiency.

Recently Professor Goodrich has described[21] what he calls the "indiscipline of the mines" where miners work most of the time under no immediate supervision. Professor Goodrich attributes to this feature of the working life of the miner a good deal of the individualism and independence which characterize that class of worker. Some of that indiscipline seems characteristic of certain types of utilities, where the work of the employee is not under immediate supervision. For example, a train crew is more or less on its own responsibility from the time it leaves its terminal. Similarly, the conductors and motormen of the street railways or elevated trains have responsibilities which are not subject to constant check by superiors having power to discipline during the hours of work, unless indirectly through the use of so-called "plain-clothes inspectors" or "spotters."

The difficulty or impossibility of close supervision necessitates from the company's point of view selecting for employees those who seem to possess a sense of responsibility or a measure of self-discipline. At the same time freedom from close supervision may attract workers who resent the watchfulness of a supervisor.

Related to this "indiscipline" of utility jobs is the difficulty of controlling all the details of a labor policy from a

(*Footnote 18 continued from page 179*)
and the safety of millions of property, imposes upon them obligations and duties commensurate with the character of the trusts committed to them." *Toledo, Ann Arbor & North Michigan Ry. Co. v. Pennsylvania Co.*, 54 Fed. 746, 753 (1893).

[19] The Chicago Surface Lines recently gave a dinner to about 5,000 trainmen who had a perfect no-accident record during the preceding year.

[20] Such voluntary practices establish standards higher than the compulsory standards embodied in the legislation of some states, such as testing enginemen for color blindness.

[21] Carter Goodrich, *The Miners Freedom* (Boston: Marshall Jones Co., 1925).

central office.[22] The Public Service Company of Northern Illinois, for example, has stations scattered over a considerable territory. No one station is large enough to support a labor or employment manager, and consequently the foreman or superintendent is charged with responsibility in dealing with labor. Industry is replete with illustrations of foremen's abuse of the privilege of hiring and firing. Unless restrained or unless a high type of person holds the position, the tendency is for a foreman to act as though he were an "over-lord." The consequences have been shown to be disastrous for employees as well as the company. Where progressive managements have recognized this difficulty, they have shorn the foreman of much of his arbitrary power to hire and fire. In most large utilities as in up-to-date private concerns, the local shop foreman or plant superintendent may hire only within certain general limits laid down by the central office and may not "fire" from the company's employ, though he may separate an employee from any job within his jurisdiction. Such arrangements emphasize the fact that the technology of the utility industries, in so far as it requires decentralized production, not only handicaps organization of the workers but also increases the difficulty of carrying out a consistent and uniform labor policy.[23]

The other two groups of factors—business or market factors and social factors—will be discussed in the second installment of this article which will appear in the November *Journal*.

[22] Only 17 of 184 electric companies reported centralized employment departments to the Industrial Relations Committee of the National Electric Light Association, *Proceedings*, 1925, p. 168.

[23] The technique of the public utility industries affects the agreeableness or disagreeableness of work in about the same way as in some types of factory employment, again illustrating the fact that the so-called distinguishing characteristics here noted are differences of degree more than of kind. No one who has worked in a steel plant as well as in a gas plant can say that there is anything peculiarly disagreeable or hazardous in periodically cleaning out a utility gas oven. In other words, the hazards of moving parts, the endurance of extremes of heat and cold, contacts with electricity and chemicals, are about the same in the case of utilities as in the case of similar private employments, although some utility jobs have greater accident and sickness hazards than the common run of jobs in private industry. Weather and climate sometimes prolong jobs under the most arduous conditions, and utility employees are expected to accept such experiences as part of their work. This is particularly true of the operating jobs of the transport utilities and to a lesser extent of the maintenance and trouble work of electric, gas, and telephone utilities.

See Robertson, *Feeding the Iron Hog*, pamphlet published by Brotherhood of Locomotive Firemen, in which the work of a fireman is graphically described.

THE "FREE-LOT" SUBDIVIDER: HIS METHOD OF OPERATION AND THE AVAILABLE METHODS OF CONTROL

By H. MORTON BODFISH

THE first installment of this article which appeared in the May issue of the *Journal* described a variety of ways in which the free-lot subdivider lured and caught the inexperienced investor in real estate. The great variety of these schemes, the widespread use of this type of merchandising, and the distinctly unethical and exploitative procedure involved raised the question: Can such predatory activity be stopped and by what means? This portion of the article will describe the methods of control that are available and that are being employed by the various agencies interested in putting an end to free-lot operations. The sections and exhibits accompanying this article are numbered consecutively following the preceding installment.

III. Agencies for Control

The tactics of the "free-lotter" are so evidently predatory that a variety of agencies have figured in combatting the evil. These agencies range from those which are purely investigative through those partly investigative and partly coercive to those which are largely coercive. Often several of these were used in the same locality before the "free-lotter" admitted defeat and abandoned the practice. In some cases he did so only after restoring part, at least, of his gains and sometimes paying a fine in addition. In one or two cases the promoter and some of his cohorts enjoyed the enforced hospitality of various governmental bodies for varying periods, the longest being a year and a day.

The Better Business Bureaus. Perhaps the most effective of the purely investigative agencies combatting the "free-lotter" are the Better Business Bureaus, which are located in 46 of the larger cities of the country. Almost every Bureau has taken a decided stand against this type of merchandising.

One of the methods used by the Bureaus in helping to remove this evil is to search for illegal operations of the company, and also of the individuals composing it, both in their real estate activities and in other fields. If such illegal operations are found, they are reported to the District Attorney's office. In some cases the offenders have been tried and punished as a result. If the operations are unassailable legally but at the same time very unfair, results can sometimes be obtained by reporting the findings of the Bureau to the newspapers which in some cases bar the advertising of the offenders. The facts can also be reported to banks and other institutions to which people are likely to go for financial advice.

Probably the most effective weapons of the Better Business Bureaus against the "free-lotter" are publicity campaigns, a number of which have been conducted in the newspapers. A good example is the work of the St. Louis Bureau which published a series of newspaper advertisements under such headings as that shown in Exhibit VI.

This Bureau also used the radio in warning the public of the pitfalls to be encountered as a result of "winning" a "free-lot." That the publicity methods

of the Better Business Bureaus are effectual in cutting down the profits of the free-lot promoter is shown by the fact that one firm in Toledo obtained a temporary injunction preventing the Bureau from publishing advertisements in newspapers in which persons were warned to investigate carefully the business methods of the concern which was selling lots by the free-lot scheme. This injunction was later dissolved by the court of common pleas.

Exhibit VI.

Winning a Lot May Mean Losing a Lot

"FREE LOTS" the "SOMETHING FOR NOTHING" LURE

A FREE LOT FOR $7.50

A story of how it costs money to get "something for nothing"

FREE LOTS

. . . . now cost real money.

In cities where there are no Better Business Bureaus, the Vigilance Committees of the Associated Advertising Clubs of the World may perform a similar function. By investigating the methods of the "free-lotter" and barring his advertising from the newspapers they are able to decrease greatly his effectiveness, while a publicity campaign will virtually nullify his efforts.

Local Real Estate Boards. The local Real Estate Boards have been of service in protecting the public from the effects of such predatory merchandising. Their effectiveness has been enhanced by cooperation with the other agencies mentioned.

The real estate license laws of some of the states have provisions aimed at the control of the usual type of free-lot merchandising. The Real Estate Boards limit the "free-lotters'," activity by bringing violations of the law to the attention of the License Commission. In several cases local boards have caused a cessation of activities merely by securing a special investigation from the County Attorney's office. The operations of most of these "generous" subdividers will not stand close inspection, a fact of which they are very conscious. Of course, if the offenders are members of the Real Estate Board they can be disciplined through the Code of Ethics of the National Association of Real Estate Boards. However, as was mentioned earlier, it is very seldom that a Realtor is found using such methods.

Some of the publicity campaigns of the local Real Estate Boards have been very effective in cutting down the profits of the "free-lotter" by causing the public to investigate the details of the scheme before they invest any money. An example is the newspaper advertisement used by the Waco Real Estate Board and reproduced in Exhibit VII. Furthermore these campaigns serve the purpose of calling the attention of the public to the opposition of the National Association, as well as of the local boards, to

Exhibit VII

WARNING:
Free Lot Schemes!

THE NATIONAL ASSOCIATION OF REAL ESTATE BOARDS is continually making warfare on unethical real estate practices.

The WACO REAL ESTATE BOARD warns the public that so-called FREE LOT SELLING SCHEMES are not in conformity with the code of ethics of this body, and in our opinion are not good business for seller or buyer, especially the buyer.

We believe that free property is the highest priced property one can buy.

THE WACO REAL
ESTATE BOARD, INC.

these questionable practices in merchandising real estate.

The occasion for the use of this advertisement (Exhibit VII) was the activity of a free-lot firm which secured prospects by a house-to-house canvass, advertising the free drawing of lots in the company's addition. At a later date the unsuspecting prospect was notified that he had been successful in the drawing for the lot and was urged to contract immediately for the property. If the "winner" wished to look at the "prize", he was taken to the addition and there informed that the preparation of the papers, abstract, etc., would cost $49.00, on payment of which the lot would be delivered. The contracts under which these lots were sold restrict the lot to improvements costing not less than $3000. The lots in the addition were 25 by 125½ feet, while the regulation lot was 50 by 165 feet. After receiving his "free" lot the prospect found himself unable to do anything with it unless he also purchased the other half-lot which the company would sell him at a price of from $250.00 to $350.00 or more, according to the capacity and gullibility of the victim.

Another type of control has been devised by the Real Estate Board of Baltimore which "has offered the services of a committee of expert appraisers to the persons who have been offered free lots to assist in discovering the real market value of the lots that are being unloaded by free-lot operators at prices that have been found to be ten times the real value in particular cases. The appraisers of the Baltimore Board give their services gratis to the free-lot prospects."[1]

In numerous instances the local boards have adopted resolutions of their disapproval of the free-lot scheme. One such resolution follows, which also illustrates the cooperation between the real estate board and the local Better Business Bureau.

"Whereas, it is revealed by the Fort Wayne Better Business Bureau that certain transient real estate promoters are visiting Fort Wayne and vicinity and conducting so-called 'free-lot' schemes, the usual plan of which is to secure a piece of farm land, stake it out into lots, without improvements, and then operate a plan whereby certain persons are informed that they are the 'lucky' winners of free lots, with no expense to meet except the mere cost of the transfer of the property; whereupon the winners discover that the lots are either too narrow or so poorly located as to make them almost valueless, and can be made usable only by the purchase of additional ground at seemingly low prices but which are in reality much higher than the combined areas are worth; be it, therefore, resolved:

"That the members of the Fort Wayne Real Estate Board go on record as vigorously condemning any plan of sale of real estate which involves the principles used in such sales plans, first, because immediately it is an injustice to the purchasers, and, second, because it is in direct violation of the modern methods of conducting the real estate business on high ethical grounds, and has a tendency to discredit the efforts of all who seek to conscientiously serve their clients, their customers and the community as a whole."

The newspapers have generally been found willing to publish articles and news stories which expose the dangers behind the alluring appearance of the something-for-nothing charities of the free-lotter.

State License Commissions. The License Law Commissions have steadfastly opposed the use of these practices and in seven states have definitely adopted the policy of revoking the license of any real estate broker or salesman who engaged in free-lot merchandising.[2] The Ohio board said in connection

[1] Report of the Baltimore Board in the *National Real Estate Journal* for December 12, 1927.

[2] These seven states are New York, New Jersey, Ohio, Wisconsin, Illinois, Michigan and California.

with its investigations of such schemes:

"These practices have been bringing the real estate business into disrepute. Those of the public least able to lose their meager earnings are being mulcted and defrauded and the indiscriminate and unrestrained platting of farm lands into small lots far from the city limits, with no prospects of early development, will be a handicap to the proper and normal growth of our metropolitan areas. . . . This Board is of the opinion, after careful investigation, that every one of these schemes bears on its face the badge of fraud. No broker or salesman continuing such sales methods will be granted a license to engage further in the real estate business and there will be a swift revocation of the licenses of those now licensed who continue such business practices."[3]

The National Association of Real Estate Boards, advocating as it does advanced standards of practice in the real estate business, has always opposed such methods of merchandising and has at all times shown its willingness to cooperate with local boards in stamping out the activities of the "free-lotters."

After the matter has been called to its attention by the Better Business Bureaus or by the Real Estate Boards, the Post Office Department has in several instances issued fraud orders against the offending companies and their officers.[4] In cases where it can be used, this provides a very effectual bar to the further operations of the free-lot artist, especially where his activities extend over a wide area. The right to use the mails is statutory, really only a privilege, and can be withdrawn by the postmaster-general.[5]

District Attorney. The office of the District Attorney has been enlisted when the "free-lotter" was found to be using methods which are definitely fraudulent, in addition to "giving away" lots. In one case which resulted in the indictment of two men in New York on charges of grand larceny in the second degree, the promoters were reckless enough to sell the same lot to different buyers. In addition it was found that after purchasing a tract of land for $18,000, on which they paid $2,000, giving a blanket mortgage for the remainder of the purchase price, they sold the lots as free and clear. But their crowning mistake was in continuing to sell lots after the blanket mortgage had been foreclosed. The men pleaded guilty and were given a fixed time in which to restore as much as possible of the $100,000 which they were supposed to have received from the persons who thought they were getting unencumbered building lots.

Federal Radio Commission. In some cities the "free-lotters," finding house-to-house canvassing rather expensive, being rather apprehensive of using the mails, and being barred from the newspapers, have resorted to the radio in their attempt to secure prospects. Advised of this condition by local agencies, the Federal Radio Commission addressed a warning to radio stations with the result that such advertising has been curtailed.

IV. A Recent Court Case

The difficulties of obtaining a conviction through criminal action are well illustrated by a recent case tried in the Federal District Court for Nebraska, Omaha Division. Aggressive action on the part of the local real estate board preceded the action by the government:

"The Omaha Real Estate Board through Leo B. Bozell, executive secretary, Saturday

[3] Quoted from the Findings of the Ohio License Law Commission, J. Wilbur Jacoby, Chairman.

[4] For example, the case of the Naga Sales Corporation and a concern of New York City against whom a fraud order was issued on July 11, 1927, in connection with a free-lot scheme in Pelham Manor in Baker County, Florida. The details are to be found in the records of the Solicitor of the Post Office Department.

[5] *Missouri Drug Co. v. Wyman*, 129 Fed. 623 (1904).

denounced a so-called 'free-lot' drawing promotion plan of the U. S. Suburban Home Developers, Inc., who are promoting a subdivision known as Lakoma Heights Addition, near the Lakoma Country Club.

"The realty board declares that a charge of $50 is made for 'abstracts, notarial and other costs' on the supposedly free lots drawn by 'lucky persons.'

" 'They are not giving away anything,' says the board's statement, 'for less than it is worth. When they dispose of property they make a profit out of it. Furthermore, this particular addition is not in Omaha. It is not within the three mile limit over which the planning board has jurisdiction.'

"The Realtors claim that the lots, alleged to be given away in drawings, are only 25 foot lots, too small on which to build, necessitating another purchase if the lucky drawer wants to build.

"H. H. Cowl, advertising manager of the company, whose methods were attacked, said Saturday that the corporation was 'merely doing what many merchants do—give away or sell below cost some things as an advertising proposition.'

" 'Our campaign is nearly complete now,' he said, 'We have several testimonial letters from people who are at Lakoma Heights. Everything that we do is open and above board. We are soon going to start building homes on the installment plan.'

"The Realty Board's statements on the proposition were contained in a letter to the Nebraska Farmer at Lincoln, whose 'advice to investors column' had advised persons not to send $59 'costs' to the development company for the 'free' lots."[6]

The actual litigation against these free-lot operators is found in the case of *United States of America*, plaintiff, v. *Harry H. Cowl, John W. Weinstein et al*, defendants.[7]

The indictment returned by the grand jury stated that the defendants "carried out . . . a scheme and artifice to defraud by means of false, fraudulent and fictitious pretenses and representations." The defendants had three pieces of property, the principal tract of which was called Lakoma Heights. They represented that it was an established community with paved roads, street lights, electricity, telephone lines; that city water mains and sewers were laid to the property, that the company planned to build many residences on this property; and that it was a few blocks from an exclusive residential section of the city of Omaha. Names were obtained at fairs and all those signing cards received notices that they had been "selected." The government charged that the person designated to receive the lot was not chosen by chance; that $59 was more than the actual cost of abstract, deeds and incidental expenses in connection with the transfer of title; that Lakoma Heights was not an established community and that it did not contain the utilities represented; further that the company did not intend to build houses; that the site was three or four miles from Dundee; that lots donated for $59 "actual cost" were not worth the sum of $250 as represented, and that the same lot could not be disposed of to several persons with complete disregard for the rights of the previous holders. The indictment contained 14 counts, most of which involved the transmittal of letters or documents through the mails, which brought the case within federal jurisdiction. The following reproductions of the "come-on" letter and signature card (Exhibits VIII and IX) further indicate that the activities of the defendants were typical. A number of these were included in the indictment. It should be noted that the signer was expected to indicate in which of four cities he preferred to "own a building lot."

[6] From *Omaha Nebraska News*, May 3, 1925.

[7] District Court of the United States for the district of Nebraska, Omaha Division, Case No. 5294—Criminal.

Federal Statute Violated. The indictment was partially based on section 37 of the United States Penal Code. A portion of this conspiracy section reads:

"If two or more persons conspire either to commit any offense against the United States, or to defraud the United States in any manner or for any purpose and one or more of such parties do any act to effect the object of the conspiracy, each of the parties to such conspiracy shall be fined not more than ten thousand dollars, or imprisoned not more than two years, or both."

The alleged conspiracy was to violate section 215 of the Penal Code, which is as follows:

"Whoever, having devised or intending to devise any scheme or artifice to defraud, or for obtaining money or property by means of false or fraudulent pretenses, representations, or promises, . . . shall, for the purpose of executing such scheme or artifice or attempting so to do, place, or cause to be placed, any letter, postal card, package, writing, circular, pamphlet, or advertisement, whether addressed to any person residing within or outside the United States, in any post-office, or station thereof, or street or other letter box of the United States, or authorized depository for mail matter, to be sent or delivered by the post-office establishment of the United States, . . . shall be fined not more than one thousand dollars, or imprisoned not more than five years, or both."

The Counts Which Went to the Jury. Copies of the indictment and the judge's charge to the jury were obtained in order to ascertain what matters of fact the court allowed as a basis for the jury's deliberations. The judge eliminated those portions of the indictment which maintained that certain utilities were not available in Lakoma Heights; that the value of the lots was only a fraction of that indicated by the defendants; and that the sale of individual lots to several different purchasers was necessarily fraudulent. The allegations which were left to the jury for consideration were that the persons designated to receive a free lot were not chosen by chance; that $59.00 was more than the actual cost of the abstract and other incidental expense in connection with the transfer of title; that Lakoma Heights was not an established community; that some other utilities were not on the property as claimed; and that the company did not plan to build any residences on the property. Apparently, the jury reached its decision on the counts charging a conspiracy and scheme to defraud by using some or all of the misrepresentations listed above as left for the jury's consideration and on the final count which charged certain overt acts in carrying out the conspiracy, such as the mailing of various letters in connection with the scheme and the signing of land contracts by individuals alleged to have been engaged in the conspiracy.

Exhibit VIII

SPECIAL ADVERTISING CAMPAIGN

I. B. C.

For Building Lots.....

I assume No Obligation by signing this Card.

Name Mrs. John J. Fossler

Address Millard, Nebr.

City

Occupation Housewife

Place X where you would like to own a building lot.

___CEDAR RAPIDS, IA. ___OMAHA, NEB

___SIOUX, CITY IA. ___MOLINE, ILL

There were 14 counts in the original indictment. The court eliminated three of them and modified the others in a manner which caused the writer to feel that the judge was far from unsympathetic toward the dilemma of Cowl and

Weinstein. Nevertheless, Cowl was convicted on all 11 counts and Weinstein on 10 counts.[8]

EXHIBIT IX

U. S. SUBURBAN HOME DEVELOPERS INCORPORATED
Suite 536, First National Bank Building, Omaha, Neb.

LAKOMA HEIGHTS
Omaha, Neb.

Mrs. John J. Fossler
Millard, Nebr.

Sept. 17, 1927.

Dear Sir:

Recently you signed your name to the enclosed Building Lot Card at the Des Moines Fair.

Permit us to congratulate you upon having had your name selected to receive a building lot at Lakoma Heights, "The Development Beautiful."

As was announced the total cost to you will be Fifty-nine Dollars, which covers the consideration for the lot, services rendered by the Company, also the proportionate share of the original searching of title, surveying of property, drawing of deed, notary public acknowledgment, and all other incidental expenses appertaining thereto.

In order to receive the deed to this building lot it will be necessary for you to come to our Omaha office (address above) that we can take you out to the property at our expense, any day of the week, and show you the lot to which you are entitled. This opportunity will be held open for not later than September 24, 1927.

We know that when you inspect Lakoma Heights Addition you will be delighted with the magnificent location, and speak highly of the premises. The reason you are obtaining this property under the above conditions is that we would like to have you give us a testimonial letter and recommend it to your friends.

Looking forward to an early visit from you, we are

Yours very truly,
U. S. SUBURBAN HOME DEVELOPERS, INC.
J. WILLIAMS,
Advertising Manager.

Open Sunday.
RWS:GMV

P. S. PLEASE LET US KNOW WHEN WE MAY EXPECT YOU IF YOU CANNOT COME BY THE ABOVE DATE. BRING THIS LETTER WITH YOU FOR IDENTIFICATION.

The Decision. The jury considered that the defendants had entered into a conspiracy to defraud through the use of merchandising appeals which we have previously considered and which included the something-for-nothing bait and that some of the transactions and relationships which grew out of purchases made under such conditions were clearly fraudulent. Although the study of the case has been based entirely upon an examination of the original indictments, the judge's charge to the jury and the exceptions thereto, newspaper reports, and correspondence with persons interested in or attending portions of the trial, we feel that this decision establishes a precedent which can be invoked in initiating legal action against persons using the mail to sell real estate on the free-lot method of operation, although this precedent is somewhat weakened by the presence of other practices, which, although generally accompanying, are not an integral part of the scheme.[9]

Conclusion

The universal attitude toward the free-lot scheme of merchandising subdivisions holds it to be most reprehensible. Close

[8] The records show that these individuals operated in five cities in three states and that in the particular development, Lakoma Heights, they had collected about $192,000.00 from the sale of lots with considerably less than half the lots in the tract deeded, but with many contracts outstanding.

[9] The actual sentence was substantially as follows: (1) Harry H. Cowl, President, U. S. Suburban Home Developers Inc., was sentenced to one year and one day in the Federal Prison at Leavenworth, Kansas, also a fine of $5,000.00; (2) John W. Weinstein, Sales Manager, was sentenced to six months in the County Jail, fine $1,000.00 (both had sixty days to appeal before execution of the sentences); (3) Two salesmen, who entered pleas of nolle-contendere (a plea sometimes accepted in criminal cases not capital whereby the defendant does not directly admit himself to be guilty, but tacitly admits it by throwing himself upon the mercy of the court and desiring to accept a small fine, which plea the court may accept or decline) and were fined $100 each, with 30 days in which to make payment.

observation of its method of operation and of the low-income, inexperienced group at which it is aimed brings the conviction that it is entirely exploitative and predatory. One instinctively resents the complete deception that is involved in the operation from the start, namely, the allegation that something is being given for nothing when as a matter of fact, a handsome price is being exacted for the properties thus sold.

Surveying the methods of control we find that they fall into two classes. The legally constituted means are found in the fraud statutes and in the remedial and restraining functions of the courts. The second type of control is that of a more informal nature exercised largely through publicity and other means of influencing public opinion by such bodies as Better Business Bureaus, the Real Estate Boards and others. As a practical matter, the legal devices are inadequate. In the first place, no statutes bear directly upon the activity except where use of the mails violates the Federal Penal Code, or advertising statutes and "confidence game" enactments in individual states provide remedies. If the misrepresentation concerning facts other than value is to be taken into court by an exploited party, the low value of the land units involved makes relief cumbersome and expensive in comparison. The person who has donated $40 to $80 to the free-lot operator is thus practically without remedy in the courts. In case misrepresentations were made as to value the courts take the position that, if prospective purchasers were on the ground and were themselves afforded opportunity to form an estimate or opinion as to value, there has been no misrepresentation. It is an integral part of the free-lot method to take both the husband and wife to visit the property, thus eliminating this potential legal liability and thus making preparation for the previously described switching tactics. Under these circumstances according to the court attitude there has been a transaction with a valuable consideration openly agreed upon and the ruthless doctrine of caveat emptor is considered to hold.[10]

The informal types of control were discussed in considerable detail in this paper. Those in touch with present conditions know that free-lot subdividing has diminished as a result of the efforts of these agencies. Let us hope that their vigilance will continue because the free-lot subdivider is not the sort of person who should have a share in determining the future structure of our cities, nor is he an individual who recognizes any social responsibilities in connection with "land investments" which he offers to the gullible.

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[10] The penal law of the State of New York "utterly forbids the use of the 'free-lot' scheme" in selling real estate, according to an opinion given by Albert Ottinger, attorney general, in a letter to A. C. MacNulty, deputy Secretary of State in charge of the administration of the New York real estate license law, a copy of which the New York license commissioner has forwarded to the National Association of Real Estate Boards.

"This is true even where there is no deceit in the particular case, it being the evident purpose of the legislature to forbid the use of such methods because of the probability that they would be accompanied by deceit," the New York attorney-general says.

Power of the New York real estate license officials to move against firms using "free-lot" bait in disposing of their tracts is indicated in the attorney general's opinion as follows:

"Penal Law Section 421 bears the heading 'Untrue and Misleading Advertisements.' It is a very broad provision, broader than the heading would indicate, and I am of the opinion that it utterly forbids use of the 'free-lot' scheme.

"In the case of real estate brokers and salesmen guilty of violations of Penal Law Section 421, by using the "free-lot" scheme as an aid to conducting their licensed business, there need not necessarily be any proof that deceit was employed in the particular case or that anybody has actually been defrauded in order to justify exercise by the Department of State of the disciplinary powers vested in it under Real Property Law Section 441-c."

A STUDY OF THE INTERCORPORATE STRUCTURE OF SERVICE CORPORATIONS IN THE ELECTRIC LIGHT AND POWER INDUSTRY

By KENNETH FIELD

FEW factors have played a greater role in bringing about the present prosperity of the electric light and power industry than the efficiency of group management organizations.[1] Few factors have furthered the reduction of electric rates to consumers more than the economies made possible by these same organizations. Few matters in corporation finance are so intricate as the stock control relations which incorporated service organizations[2] bear to the companies which they serve. Yet, despite this interest to investor, to consumer, and to student of finance, surprisingly little has been written concerning group service organizations. It is the purpose of this paper, therefore, to examine the intercorporate structure of these organizations. The plan of presentation is: (1) types of technical organization, (2) causes of separate incorporation, and (3) stock control relationships.[3]

I. Types of Technical Organization

Operating Management Organizations. The operating organizations of electric light and power companies are of two types: (1) a complete management organization which directs all the policies of the operating company, as in the case of the Detroit Edison Company; and (2) a mere routine operating organization which carries out policies formulated by an outside management organization, as in the case of companies in the Standard Gas & Electric Company system. In the latter system "the operating force on each of the individual properties is similar to that usually found on independent properties, with the important exception that the personnel need be sufficient only to carry out routine work in accordance with the policies and methods prescribed by the central operating and engineering organization. All the actual operation of the local properties is in the direct charge of the vice-president in charge of operation of the management corporation."[4]

The explanation of the above mentioned difference in organization is to be found in the size of the operating unit. The large operating company can economically employ, as a part of its own

[1] That is, organizations which perform financial management, operating management, and/or construction services for groups of operating companies. In a sense, organizations purely for control purposes may be regarded as a distinct type of service organization; but the author prefers to restrict that term to organizations rendering active technical services.

[2] A list of some of the more prominent service corporations would include the following: Electric Bond and Share Company; Stone & Webster and Blodgett, Incorporated; Stone & Webster, Incorporated; J. G. White & Company; J. G. White Management Corporation; J. G. White Engineering Corporation; H. M. Byllesby and Company; Byllesby Engineering and Management Corporation; Hodenpyl-Hardy & Company, Incorporated; W. S. Barstow & Company; Henry L. Doherty & Company; Doherty Securities Company; The Doherty Operating Company; Republic Construction Company; Water Works & Electric Securities Corporation; United Engineers and Constructors, Incorporated; United Light & Power Engineering & Construction Co.

[3] Illustrations are as of January 1, 1928, unless context or footnotes indicate otherwise.

[4] 89 *Electrical World* 1127.

organization, a class of technical ability that only group organizations can economically supply to small operating companies. The effect of the size of operating subsidiaries on the management organization of holding company systems is illustrated by the management organizations of two large public utility systems: the United Light and Power Company system and The North American Company system.

"The operating companies that are owned and controlled by the United Light and Power Company are, so far as is compatible with the economic interests of the group as a whole, locally managed. In order to supply that direction of effort and unity of policy necessary for the successful group operation, the holding company has under it another corporation titled the United Light & Power Engineering & Construction Company, which acts as management director of the operating companies . . . The management company does not exercise the same degree of control over all of the holding company properties, there being two large units—Kansas City, Missouri, and Columbus, Ohio—the operating and engineering organizations of which can economically be sufficient in numbers and talent to require little management supervision, except in major construction.[5]"

With respect to the North American Company,

"The fact that the subsidiaries are principally of large size and independent importance has been responsible for an adoption of policies somewhat different from those of most other public utility holding companies. The operating, construction, employe and public relations activities of the subsidiaries are conducted by their own executive staffs, and not through a centralized management and engineering organization governing the operation of all subsidiaries."[6]

With regard to the future status of system management organizations, the fact that large companies can economically retain complete managerial staffs implies that group operating management will become of less importance in the electric light and power industry. The formation of large regional electric light and power companies is gradually resulting in the development of operating companies of sufficient size to permit the retention of complete staffs by those companies individually. Where subsidiaries have developed complete operating organizations, the group management function has been reduced chiefly to the activities of analyzing comparative records, of conducting researches, and of serving as a clearing house for improved methods. Thus The North American Company has no central management organization at all; but "the heads of the various departments of the subsidiaries, and of other companies in which The North American Company has substantial investments, are brought together through a system of advisory committees, and have thus been enabled effectively to pursue important cooperative researches which have materially aided in the establishment of unique records in efficient and economical operation."[7]

Not all holding corporation systems, however, confine their activities to the electric light and power industry to such an extent as does the North American Company. In the multi-industry systems, the presence of a large number of gas, water, electric railway, ice, steam-heat, and other subsidiaries, which do not lend themselves to large ownership units so readily as do electric light and power companies[8] gives to group man-

[5] 89 *Electrical World* 1151.

[6] "The North American Company," a booklet published by the Company, pp. 48–9.

[7] *Ibid.*, p. 49.

[8] Gas and electric railway properties may be ownership and operating units fully as large as electric companies, but this applies, for the most part, only in densely populated areas. Gas and electric railway

(Footnote 8 continued on page 295)

agement a degree of importance that is not warranted by the electric light and power subsidiaries alone. Where several services are rendered by a single operating company, however, though the activities are conducted in several isolated communities, the effect is to diminish the necessity for intercorporate group management organizations.[9] This result follows from the fact that the economies of group management are purely economies of size. The extent of composite service and the corporate organization for rendering various services, therefore, will have very great influence on the holding company management organizations of the future.

Examining the relationships to holding corporation systems, separate operating management organizations are found: (1) as separate corporations, (2) as departments of system control companies, and (3) as departments of separate service corporations. Examples of the first type of organization are the J. G. White Management Corporation, the Doherty Operating Company, and the Electric Management & Engineering Corporation; examples of the second type of organization are the operating management departments of the American Gas & Electric Company, and the Commonwealth Power Corporation; and examples of the third type of organization are the operating management departments of Stone & Webster, Incorporated, the Byllesby Engineering & Management Corporation, the United Light & Power Engineering & Construction Company, W. S. Barstow & Company, the Electric Bond and Share Company, and the former General Engineering & Management Corporation.

Construction Organizations. The construction requirements of electric light and power companies may be divided into two classes: (1) construction of distribution facilities and (2) construction of power plant and transmission facilities. Distributing facilities have a comparatively steady, orderly growth which can be economically taken care of by the regular staff of the operating companies. Power plant and transmission facilities, on the other hand, have an intermittent growth which can be handled most economically by a construction organization which provides facilities for enough companies to insure a large continuous demand for its services. Further, for best results, designing and construction should be performed by a single organization. The designing of power plant and transmission facilities requires a very high class of technical skill which can be effectively supplied only by large organizations which have a good load factor. Therefore, construction of power plant and transmission facilities is usually done by an organization separate from the electric light and power operating company.[10]

In many instances the separate construction organization confines its activities chiefly to the subsidiaries of a single system. Examples of this type of organization are: W. S. Barstow & Company, Byllesby Engineering and

(*Footnote 8 continued from page 294*)

properties are less commonly interconnected over large areas than are electric power properties. The absence of physical interconnection has often been advanced by regulatory commissions as a ground for refusing to sanction consolidations. In other cases, franchise, rate, credit, and other considerations have interposed obstacles. This is especially true of electric railway properties, where poor credit and burdensome franchise requirements operate, not only to prevent amalgamations, but to cause further segregations.

[9] In 1922, slightly more than 37% of the electric light and power companies supplied other types of service also. In 1917, the percentage was slightly more than 40. (Census Bureau, *Central Light and Power Stations*, 1922, p. 18.)

[10] The term separate construction organization is used in the succeeding discussion to mean those organizations which are separate from the operating companies.

Management Corporation, General Engineering & Management Corporation, American Construction & Securities Company, Arkansas-Texas Construction Company, and Shawinigan Engineering Company, Ltd. In other instances, separate construction organizations do not confine their activities to affiliated companies but do a general construction business. Examples of this type of organization are: Stone & Webster, Incorporated, 80% to 90%[11] of whose construction is for clients which are not under the supervision of its managerial staff; and J. G. White Engineering Comporation, 75%[12] of whose construction is done for clients which are not under the supervision of the J. G. White Management Corporation. Recently, the United Engineers & Constructors, Incorporated,[13] was formed by uniting the United Gas Improvement Contracting Company, the Public Service Production Company, Dwight P. Robinson & Company, and Day and Zimmermann, Incorporated. Much of the construction conducted by Stone & Webster, Incorporated, J. G. White Engineering Corporation, and United Engineers and Constructors, Incorporated, is for governmental agencies, industrial corporations, and steam railroads. From these facts it may well be questioned whether a construction organization which confines its activities to a single system of operating companies, as the industry is now organized, has yet attained sufficiently large size to secure the maximum of economies.[14]

As for the relationships to holding corporation systems, construction organizations exist: (1) as separate corporations, (2) as departments of system control companies, and (3) as departments of separate service corporations. An example of the first type of organization is the J. G. White Engineering Corporation; an example of the second type of organization is the construction department of the United Gas Improvement Company prior to 1919; and an example of the third type is the construction department of Stone & Webster, Incorporated. Separate construction organizations which are separately incorporated and those which are departments of service corporations are much more numerous than are those which are departments of system holding corporations.[15]

Financial Service Organizations. The financial services within the scope of this discussion are those of originating and distributing securities. These services are of particular importance to public utility systems because the amount of capital required by them is so large. For example, in 1928 the total public utility financing,[16] including new capital issues and refunding issues, was approximately $2,633,525,332.[17] The economical raising of these funds is important because interest and dividend payments constitute such a large portion of the total cost of rendering service. Hence specialized organizations have developed to perform this service. These organizations seldom confine their activities to

[11] Federal Trade Commission, *Control of Power Companies*, Senate Document No. 213, 69th Congress, 2nd Session, p. 187 (1927).

[12] *Ibid.*, p. 170.

[13] *New York Times*, January 17, 1928, p. 46.

[14] Future consolidations may develop systems which will require the services of construction organizations larger than any in existence today. It is beyond the scope of this paper to analyze the possibility of securing greater economy by increasing the size of construction organizations. However, considering the tendencies noted above, the question may well be raised.

[15] For a discussion of the causes of separate incorporation see pp. 297 *post.*

[16] Since most, if not all, of the public utility systems in the electric light and power industry are composite, i. e., contain subsidiaries in several industries, it is proper to consider combined capital requirements when discussing system financing.

[17] 128 *Commercial and Financial Chronicle* 316.

handling the securities of a single company or even to a single system; and where they do confine their attention to a single company or system, they very seldom distribute all the securities of that company or system.

Explanation of the character of the business conducted by financial service organizations is to be found in the fact that a single company or system brings out securities only intermittently, whereas an investment banking organization must have a large continuous flow of security issues in order to be able to retain the technical and sales staffs which are necessary for searching out and utilizing the cheapest sources of capital. The majority of the investment banking organizations which are definitely allied with public utility systems, therefore, provide an even flow of securities by acting with other investment banking organizations in the formation of underwriting syndicates. Many of the larger organizations, such as Stone & Webster and Blodgett, Incorporated, and H. M. Byllesby and Company, not only handle public utility securities but deal in other classes of securities as well.

The relationships of financial service organizations to system holding corporations can be grouped conveniently into the same classes as observed for management and construction organizations. Examples of separate financial service corporations are J. G. White & Company, H. M. Byllesby and Company, and Stone & Webster and Blodgett, Incorporated. An example of financial service organizations operating as departments of system control companies is the financial service organization of the United Gas Improvement Company.[18] Examples of financial service organizations operating as departments of separate service corporations are the financial service organizations of the Electric Bond and Share Company and of Stone & Webster, Incorporated, prior to 1927.

II. Causes of Incorporation of Service Organizations

The separation of service organizations from system control companies is influenced by many considerations, of which only the most prominent can be set forth here. Since these reasons are effective in the cases of all three types of services—operating management, construction, and investment banking services—discussion is not confined to single types of service organizations, but refers to service organizations in general.

As has been intimated, the electric light and power industry is being, and has to a large extent been, formed into large systems of companies. These large systems are bound together through the medium of holding companies. The top holding company in each system directly, or indirectly through subordinate[19] holding companies, controls the companies in the system. Usually, the top holding company controls its subsidiaries through ownership of substantially all [20] of their common stocks; and usually subordinate holding companies also control their subsidiaries through ownership of substantially all of their common stocks. Thus, since the common stock equities of the companies in a system (excepting the common stock equity of the system control company) are substantially all owned within the system, about all of the common stock equity of the entire system is in reality

[18] Federal Trade Commission, *Control of Power Companies*, p. 235.

[19] The term "subordinate holding company" is used to designate any holding company which is controlled within a system, whether it be a subsidiary of the top holding company or a subsidiary of a subsidiary, etc.

[20] By "substantially all" is meant 90% to 100% of the amount of common stock.

provided by the top control company. Because of the diversification of economic conditions which the system as a whole represents, the top holding company can raise a part of the funds which are necessary to supply the common stock equities for system operating companies by the sale and/or exchange of its bonds and/or preferred stocks; but a considerable part of these funds must be raised by the sale and/or exchange of the common stock of the top control company. Thus the Cities Service Company had $80,067,461.61 in common stock outstanding in 1926.[21] In the case of large systems, like that of the Cities Service Company, it is impossible for the individuals who control the policies of a system to own all of the common stock of the system control company; and since the common stock must be issued to holders outside the controlling group of individuals, the profits which the system earns must be shared with the "outside" stockholders unless some of those profits can be taken out of the system by a means other than that of paying them out as dividends on common stock.

Separately incorporated service organizations operating on a fee basis offer such a means by which earnings may be withdrawn from holding corporation systems without being paid out as dividends; and in the cases of most of the larger public utility systems, a service corporation controls or dominates the top control company.[22]

"It is customary for the controlling service organization to provide the various service agencies and charge fees for its services to the operating companies of its group. Its banking organization arranges for and participates in the marketing of the company's securities and collects a fee; its engineering organization designs the plant and equipment and collects a fee; its purchasing organization places the orders for the supplies and equipment, inspects the purchases, and collects a fee; and its consulting managerial organization supervises the management and operation of the new facilities, and collects a fee."[23] Indeed, "among holding company executives some service organizations have been charged with 'feeing their clients to death.' "[24]

Another advantage of separately incorporating service organizations arises from the fact that service fees are a preferred claim upon the incomes of the companies served, and must be paid before dividends are declared. The dominating interests can, therefore, obtain an income through this channel when the system holding company is not paying dividends on its common stock. To illustrate, the General Gas & Electric Company, the system control company of the Barstow group, never paid dividends on its common stock and participating preferred stock from the time of its organization in 1912 to the time of its reorganization in 1925; and from 1917 to 1925 it paid no dividends on its cumulative preferred stock. Yet, W. S. Barstow & Company, Incorporated, which controlled the General Gas & Electric Company, received an income from the system. This income was received in the form of fees for management and construction services which were rendered by the W. S. Barstow Management Association, Incorporated.[25]

[21] Annual Report to Stockholders, p. 15 (1926).

[22] The service organization which controls the top holding company is usually the financial service organization.

[23] Federal Trade Commission, *Supply of Electrical Equipment and Competitive Conditions* (Senate Document No. 46, 70th Congress, 1st session) p. 214, (1928). This quotation assumes that the controlling service corporation renders all types of expert services. However, not all controlling service corporations render all types of service listed.

[24] *Ibid.*, p. 214.

[25] Federal Trade Commission, *Control of Power Companies*, pp. 210–211.

Service organizations are also incorporated as subsidiaries of system control companies, so that organizations which would otherwise be departments of system control companies may operate on a fee basis without causing the system control company to do business under the laws of several states. If the system control company operated a department which contracted with operating companies for services to be rendered in the state in which the operating company is located, it would become subject to the laws relating to foreign corporations doing business in that state; and hence, might be subjected to a measure of regulation which the holding company prefers to avoid. An example of a service organization incorporated to avoid the problems which arise when a holding company operates under the laws of several states is the United Light & Power Engineering & Construction Company. Apropos of this Company, it was stated that "the reason for the separation of management and holding functions is to avoid the business complexities of the holding company doing business under the laws of many states."[26]

Service organizations which deal with several systems or with companies under several ownerships are usually incorporated and conduct their activities as independent businesses. This is the chief explanation of the separate incorporation of the Electric Bond and Share Company; Stone & Webster, Incorporated; J. G. White Engineering Corporation; J. G. White Management Corporation; United Engineers & Constructors, Incorporated; Hodenpyl-Hardy & Company, Incorporated; H. M. Byllesby and Company; J. G. White and Company; Stone & Webster and Blodgett, Incorporated; H. L. Doherty & Company.

III. Stock Control Relationships

Stock control relationships existing between service corporations and the holding corporation systems which they may serve may be grouped into four classes. In the first class are those service corporations which are controlled by the holding corporations whose subsidiaries they serve. Examples of this class are Public Service Production Company, formerly controlled by Public Service Corporation of New Jersey,[27] Byllesby Engineering and Management Corporation, controlled by Standard Gas & Electric Company; United Light & Power Engineering & Construction Company, controlled by the United Light & Power Company; and Electric Management & Engineering Corporation, controlled by the National Electric Power Company.

In the second class are those service corporations which hold a controlling majority of the stock of the holding corporations whose subsidiaries they serve. In this group are Stone & Webster, Incorporated, which controls the Engineers Public Service Corporation; H. M. Byllesby and Company, which controls Standard Gas & Electric Company; and W. S. Barstow & Company, which controls the General Gas & Electric Corporation.

The third class embraces those service corporations which hold minority interests in the holding corporations whose systems they serve. Typical of this class is the Electric Bond and Share Company, which holds minority interests in the American Power & Light Company, the Electric Power & Light Company, and the National Power & Light Company. In so far as policies are

[26] 89 *Electrical World* 1151.

[27] Now controlled by United Engineers & Constructors, Inc. (Moody, *Public Utilities Manual*, 1928, p. 2048.)

concerned, the effects of control by service corporations with class-three relationships may not differ materially from those of service corporations with class-two relationships, since the class-three service corporations usually hold a sufficiently large minority stock interest in system holding corporations to permit effective control of the systems. To illustrate, in 1925, the Electric Bond and Share Company dominated[28] five system control companies in which it held minority voting rights. This domination was evidenced generally by the following facts:

"(1) The chief officers and directors of the Electric Bond and Share Company were directors or officers of these holding companies; (2) the presidents of these companies were in most cases Electric Bond and Share Company men; (3) S. Z. Mitchell, president of the Electric Bond and Share Company, was chairman of their respective boards of directors or of the executive committee; (4) their general offices were identical in location with those of the Electric Bond and Share Company—namely, 71 Broadway, New York City; and (5) the Electric Bond and Share Company had service contracts for their electric power subsidiaries which amounted to substantial control of those subsidiaries."[29]

The fourth class of relationships arises when a service corporation and the system control company whose subsidiaries it serves are under a common control or domination. Among the larger holding corporation systems this third interest is usually another service corporation. For example, J. G. White & Company controls the J. G. White Management Corporation and dominates the Associated Gas & Electric Company. Likewise, Henry L. Doherty & Company controls the Doherty Operating Company and the Cities Service Company.

These classes of stock control relationships reflect the connection which the system holding corporation bears to that corporation in which the individuals who dominate the system are primarily interested. Where the dominating individuals are chiefly interested in the system control company—as is the case of Public Service Corporation of New Jersey and the United Gas Improvement Company—the service organizations are controlled by the system control company. When the dominating individuals are primarily interested in the service corporation—as is the case of W. S. Barstow & Company, Incorporated; the Electric Bond and Share Company; Hodenpyl-Hardy & Company, Incorporated; etc.—the service organizations control or dominate the system control corporations. In cases in which several types of service corporations serve a single control company, the holding corporation relationships again reflect the effects of the interests of the dominating individuals. Where those interests are primarily concerned with a single service corporation —as is the case of H. M. Byllesby and Company—other service corporations are controlled by the system holding company. On the other hand, where the dominating individuals are interested in the several service corporations—as is the case of the H. L. Doherty group—one of those service corporations controls the other or others and also dominates or controls the system holding corporation.

While these holding corporation relationships have been explained in terms of the financial interests of the individuals who dominate the holding company system, some of those financial interests require further explanation. In that

[28] Domination is defined as control through ownership of less than a majority of voting stock.

[29] Federal Trade Commission, *Control of Power Companies*, pp. 6–7.

group of cases in which the dominating individuals are principally interested in the system control company, those individuals depend, for their rewards, upon the dividends paid by the system control company. Hence, it is to their advantage to see that no earnings of the system are diverted as fees to an outside service organization. In this class of cases, therefore, service organizations are controlled by the system holding corporation.

In that group of cases in which the dominating individuals are principally interested in the service corporation or corporations, those individuals depend for their rewards upon the dividends paid by the service corporation or corporations. The service corporation, in turn, depends for its income chiefly upon the fees for its services and on the dividends received from its stock holdings in the system control company. Since, as has been stated previously, the stock holdings of the service corporation are usually a fraction of the total stock of the system control company, it is to the advantage of the service corporation to divert earnings of the system control company to the service corporation.

There are two principal ways of diverting earnings from public utility systems to service corporations: One is to pay those earnings out gradually as fees[30] in connection with services rendered by the service corporation; the other is to capitalize those earnings in the financial structure of the system and to deliver to the service corporation cash and/or securities[31] which represent the capital value of those earnings.

In the latter case, the opportunity for turning over the capital value of earnings usually arises in the course of adding new properties to a holding company system. The controlling stocks of the companies which it is proposed to add to the system are first acquired by the service corporation. These controlling stocks are then transferred to the system holding company. The service corporation receives in exchange for them, not only the cost of those controlling stocks to the service corporation, but also an additional amount. This additional amount is a portion of the capitalized earnings of the holding company system. Thus earnings of public utility systems are diverted to service corporations. For example, the *Commercial and Financial Chronicle*, in announcing the acquisition of control of the Standard Power & Light Corporation by the Standard Gas & Electric Company, stated:

"A part of the transactions mentioned above have been made pursuant to an agreement dated March 22, 1926, between Landenburg and Thalmann & Co., Standard Gas & Electric Company, and H. M. Byllesby and Company. This agreement has been ratified and certain other purchases by Standard Gas & Electric Company from H. M. Byllesby and Company have been authorized by independent and disinterested directors of the Standard Gas & Electric Company. Under the terms of these transactions, Standard Gas & Electric Company will deliver to H. M. Byllesby and Company cash and securities which will represent a substantial gain to H. M. Byllesby and Company for the securities which they shall deliver to Standard Gas & Electric Company."[32]

[30] If the amount paid a service corporation is in excess of reasonable charges for its services, the amount of excess represents a diversion of earnings of the system service corporation. The problem of determining the "reasonableness" of charges is a separate question outside the scope of this article.

[31] Were the securities thus turned over to the service corporation voting stocks, the service corporation could strengthen its control of the system by retaining them. However, they are often preferred stocks and bonds. These the service corporation sells to the public for cash, or holds as an investment or speculation.

[32] Vol. 122, p. 2044. It is not intended to imply that this transaction was not fair to the stockholders of

(*Footnote 32 continued on page 302*)

These financial interests of the individuals who dominate the holding corporation systems are, therefore, primarily responsible for the stock control relationships which those systems exhibit with reference to service corporations.[33]

IV. Conclusion

In conclusion, it may be said that group service organizations have been developed to provide small corporations with a calibre of managerial talent that would not otherwise be available. In this respect they have made substantial economies possible. Group service organizations are separately incorporated partly to avoid the obstacles which beset a system holding corporation doing business in several states, partly to separate distinct types of businesses, i. e., the business of holding securities and the business of constructing or managing properties, and partly to provide legal channels for compensating the motivating geniuses of these systems more nearly in accordance with the contributions which they have made. The stock control relationships reflect the relation of these dominating individuals to the holding company systems.

(Footnote 32 continued from page 301)

Standard Gas & Electric Company. Such conclusions are not warranted by published data. However, the quotation conveniently illustrates a method of withdrawing the capital value of earnings of a holding company system. Whether such withdrawals are fair or unfair to the stockholders of the holding company depends upon the merits of each case.

[33] There are many other methods of diverting earnings to service corporations. An analysis of all such methods would be a complicated study in itself, reaching far beyond the scope of this paper.

THE COST OF REGIONAL PLANNING

By HARLEAN JAMES

THE American Civic Association recently gathered summaries of regional planning activities in 14 regions, more or less organized for planning. These regions covered roughly about 25,000 square miles or 22,400,000 acres, not a stupendous area; but on this land live nearly 30,000,000 people, a little less than ⅓ of the total population of the continental United States. The use and treatment of this land, the planning of the public utilities, the control of private construction in the interest of the public, affecting a present population of 30,000,000 and a possible future population of double or triple that number, must be of vast importance to the people who live in the region and to the people of the entire United States, so far as our general efficiency in work and comfort in living conditions are concerned.

What is Regional Planning?

When we talk of regional planning, we are dealing with terms that need definition. In the first place, perhaps, we should state what we mean by regional planning, as distinguished from city, town or local planning. A comprehensive city plan would cover comprehensive zoning, street plan and treatment, local parks, playgrounds and open spaces, location of civic center and principal public buildings, location, relocation or rearrangement of passenger and freight stations and yards with routes of entrance into the city, together with distributing systems for water, sewer, gas, telephone, electric light and other utilities. A metropolitan district or regional plan might not be much concerned with the allocation of specific areas to residential, commercial and industrial purposes, not at all concerned with small local streets, parks and playgrounds, but very much concerned and affected by the route and width of arterial highways, entrances by rail and water, the hooking up of water supplies, arterial drainage systems and possible cooperative use of other utilities.

Indeed, the first official regional planning in a metropolitan district came through common needs for sewage disposal. As early as 1889 a Metropolitan Sewerage Commission was created for 18 towns in Massachusetts, including Boston, Cambridge and other towns in the vicinity. In 1893 a Metropolitan Park Commission was created and in 1895 a Metropolitan Water Act provided for the "business enterprise of supplying water at cost to Boston and the neighboring towns and cities." In 1901 the Sewerage Commission and the Water Board joined with the Park Commission to form the Metropolitan District Commission with jurisdiction over 38 cities and towns. The Metropolitan Park System which has been created in the 36 years since its first authorization has attracted nation-wide, if not world-wide, attention.

Regional planning in a metropolitan district, therefore, would cover cooperation between all the planning agencies within the district with the purpose of articulating their local plans. Regional planning is greatly hampered where local planning agencies do not cover the entire area. In New England, the town system provides a simple process of cooperation, both in making plans and in

dealing with the public authorities who must carry them out. In the West and South the existing forms of government are not so easily brought into cooperative effectiveness except where the county can be used as a vehicle for regional planning. Regional planning should also provide key or master plans which serve distinctly the entire region. The relationship between regional and local planning agencies is reciprocal. Not only should the route of a metropolitan highway or parkway be determined from the point of view of the region as a whole but the local plans should be brought into conformity or proper relation to the regional plan. The selection of regional routes is bound to modify local plans. The use of land along a main arterial highway is influenced by the character and volume of traffic on that highway. Local zoning of such land would be quite different along such a highway and along a scenic regional parkway.

What is a Region?

Up to the present time most of the regional planning progress has been made in urban regions or metropolitan districts, dominated by a central city of considerable size. We realize that a region with common interests in many regards might be set up in industrial valleys containing mill towns and villages with no large city to take the leadership. There are also agricultural and mining regions for which there are not yet adequate planning agencies. Mr. Martin Dodge in the *National Municipal Review* for July, 1927, defines a metropolitan district as an area "within which the conditions of manufacturing, trade, transportation, labor and living—in brief, the daily economic and social life—are predominantly influenced by the central city." But such a definition is a good deal like the old prescription for catching a bird by putting salt on its tail—true enough, but difficult to achieve. Try to draw the boundaries of any such district on the map and see how many different lines would result from applying different tests.

In a discussion of this subject at the First Traveling Annual Meeting of the American Civic Association in Boston, it was made clear that the boundaries of regions set up for different purposes in the same section would seldom coincide. The region for the water supply may extend across barriers which would not define a logical region for transit or park purposes. If we are planning for the disposal of waters within a given watershed area, we can define such a region with reasonable precision. But the region which we might set up for motor delivery from retail stores would undoubtedly be different in size and shape.

The Bureau of the Census is collecting maps from cities having more than 50,000 people, outlining various areas, such as the area of daily commuting, the area of retail store delivery, the area served by electric light and power from the central city, the area served from the water supply system, and finally the area which, having regard for all factors, should be considered as constituting the metropolitan district for any city. Perhaps composite regions may thus be set up. The boundaries which are drawn around the New York region by the Committee were designed to include the "whole urban region which is economically and socially related to the port of New York," but whether the Bureau of the Census will accept these boundaries remains to be seen.

We cannot escape some degree of flexibility in the use of the term *region*, even when it applies to metropolitan districts, and particularly when it ap-

plies to other types. The boundaries set up in this generation may not apply to living and working conditions and transit and transport in the next generation. We can set up a good hypothesis for determining the area of a region for immediate procedure but we must be prepared to revise our ideas as improved methods of transport and circulation open wider possibilities for comfortable occupation of metropolitan areas.

Size of the 14 Regions

Practically all of the 14 regions from which information was secured by the American Civic Association were dominated by a large city. They might be known as metropolitan districts were it not for the fact that the increasing respect for the independence of satellite towns and a growing knowledge of psychology have induced leaders in regional planning to set up machinery for their associations and commissions which will place the planning of the regions on a truly cooperative basis. The area and population of the 14 regions is reported in Table I.

Examination of Table I shows that the regions determined by the regional planning bodies seem to have very little relation to present population, and it is doubtful if any of the gauges proposed by the Census Bureau have been applied to all of these 14 regions to arrive at the area to be considered. More than likely political boundaries have had their influence in the cases where the regional planning bodies are organized under county government. In the most populous regions the average density runs lower than in some of the smaller districts where a larger outlying area has been included in the planning studies.

Type of Planning Body

Of the 14 regions studied, nine have official regional planning bodies, that is, the planning commissions are set up by law and composed in whole or in part of public officials. These are Boston, Detroit, Los Angeles, Milwaukee, Niagara Frontier, Onondaga County, Santa Barbara County, Lucas County and Washington, D. C. The Chicago Region is served by a planning association, the Philadelphia Tri-State Region by an unofficial federation and the New York Region by a committee set up and financed by the Russell Sage foundation, which has just made its formal report. A voluntary planning association to serve the New York region is in process of organization to cooperate with the governmental authorities.

Types of Plans

Only four of the 14 regions report the preparation of comprehensive regional plans: Los Angeles, New York, Philadel-

TABLE I. SIZE, POPULATION AND DENSITY OF 14 REGIONS

Name	Size (In Square Miles)	Population	Average Density Per Square Mile
Boston Metropolitan District	400	2,000,000	5,000
Chicago Region	8,000	5,000,000	625
Cleveland Transportation Region	*		
Detroit Region	749.16	1,819,570	2,428
Los Angeles Region	4,115	2,271,151	552
Milwaukee Region	240	700,000	2,916
New York Region	5,528	10,000,000	1,808
Niagara Frontier Region	1,550	850,000	548
Onondaga Region (Syracuse)	781	280,000	358
Philadelphia Tri-State Region	4,000	3,402,805	850
St. Paul-Minneapolis Region	3,000	900,000	300
Santa Barbara County Region	2,740	65,000	23
Toledo Region (Lucas Co.)	40	400,000	10,000
Federal City Region (Washington)	450	680,000	1,511

*Area within a 30 to 40- mile radius.

phia and Washington. Of these the New York plan is complete, the Philadelphia plan in course of preparation, the Washington plan nearing completion, and the Los Angeles plan developing under annual appropriations. The Boston Region reports planning covering metropolitan highways, rapid transit and parks. The Regional Planning Association of Chicago reports that certain highway and park proposals have been carried out as recommended by the Association, though this statement does not do justice to the fundamental studies of proportion between business frontage and population and population trends which have been carried on. In Cleveland the Chamber of Commerce has made a special study of transport with the cooperation of business firms in the city, and the Cleveland Highways Research Bureau in conjunction with the United States Bureau of Public Roads, Cuyahoga County and the cities and villages of the regional area is making a 10-year plan of new arterial highways, new structures, reconstruction of existing structures, and railroad grade separations. In Detroit a regional master plan covering highways has been prepared and is now reported to be substantially realized.

In Milwaukee County the Regional Planning Department deals with major highways, parkways, parks, platting and zoning. Zoning has been carried out, a topographical survey made, platting layouts for 20,000 acres, and plans made for county highways, streets and parkways. In the Niagara Frontier Region maps have been prepared to show existing conditions of highways, parks, transportation, water supply, and sewage disposal. In Onondaga County the base map of the County has been prepared and special studies are now being conducted. In Philadelphia most of the research work and surveys have been completed, including 30 diagrammatic maps and 10 reports and bulletins. The Minneapolis-St. Paul Region is in the educational stage so far as planning is concerned, but a base map on a scale of one mile for 500 feet has been prepared as the first step. In Santa Barbara County, a zoning plan for the urban area of the County is in final stages. Procedure for control of subdivisions has also been legalized in accordance with the California Act. In Lucas County (Toledo) a report on major highways and parkways has been prepared, the major highway report has been adopted and is on record for county road width.

In the Washington Region, there are in addition to the National Capital Park and Planning Commission, set up by Congress to prepare, develop and maintain a comprehensive, consistent and coordinated plan for the National Capital and its environs, the Maryland National Capital Park and Planning Commission, with definite planning powers and appropriations, and the Virginia National Capital Park and Planning Commission. Regional park and highway plans have been prepared by the National Capital Park and Planning Commission. Park proposals and highway construction are being carried out according to the recommendations of the Planning Commission. In Maryland where the cooperating Planning Commission has authority to plan, zone, control subdivisions, acquire park land within 141 square miles in Maryland adjacent to the District of Columbia, and put zoning into effect, good progress has already been made.

Cost of Planning

So much for the machinery and progress of the 14 regions. It must be obvious that with such differences in area

covered, in powers conferred, in progress achieved, and population included, assessment of costs is most difficult. In some cases work has been secured from existing official and unofficial groups the cost of which cannot be computed. From the 14 reports received it would appear that about $2,000,000 has been or will be expended in making regional plans for the 25,000 square miles. But it must be remembered that only four of these cover comprehensive regional plans. In other places the work is being carried on from annual appropriations, some of them very small. By the time the 14 comprehensive plans are completed considerably more money will have been expended.

The costs in the four regions preparing comprehensive regional plans are $800,000 for the very thorough surveys and plans, now completed, for the New York Region; about $90,000 for the surveys and plans so far completed for Washington and environs; a budget of $500,000 estimated for the next three years' work in the Philadelphia Tri-State Region, with $100,000 already expended; and an annual budget of $50,000 being expended in the Los Angeles Region.

Since the Regional Plan of New York and its Environs is the only one which is now complete, no comparison of costs can yet be made. Perhaps, however, we may examine into what the Committee on the Regional Plan of New York and its environs has produced with its $800,000. The New York Committee was headed, first by Mr. Charles G. Norton, and after his death by Mr. Frederic A. Delano, both connected with the historic Plan of Chicago prepared by Daniel H. Burnham over 20 years ago. Service on the Committee which directed the undertaking was voluntary. The money was expended for making surveys and plans and in publishing a series of reports.

The Regional Plan for New York may be said to be the first comprehensive, coordinated regional plan to be completed in the United States. It was necessary, therefore, for the Committee to approach the problem with minds unbiased by the piecemeal planning, however admirable, which had been carried on in other regions. The Committee of necessity limited its field studies to those matters which had direct bearing on the mapping of a graphic regional plan dealing with tangible proposals for improving physical conditions, according to the statement of Thomas Adams, General Director of Plans and Surveys. But for all this limitation, the studies relating to population distribution, industrial locations and relationships, land values, traffic, transit and transport are far more detailed than we have yet seen in other regions.

The conclusions of the Committee are being presented in 12 large-paged volumes, 10 of the volumes covering the principal studies as a basis for the planning and two presenting in text, maps and diagrams the conclusions and proposals developed as a result of the survey. The 10 volumes deal with the major economic factors in the New York metropolitan region; the trends and tendencies in the assignment of areas of activity in leading industries; detailed studies of the most important fabricating industries and of activities connected with wholesale markets, retail shopping and finance; distribution of population; land values; highway traffic; transit and transport; port and industrial areas; public recreation, including studies of the growth, extent and distribution of public open spaces; neighborhood communities and development of new towns; the uses of buildings and spaces about them, including zoning and housing; sunlight in urban areas; plan-

ning and development of unbuilt land; economics of land subdivision; rights in land under water; the maintenance of the integrity of the street plan; and public services and sanitation. The Plan volumes will cover an historical summary; an analysis of the general influence and trends of urban expansion, and of the mechanics and application of planning; a review of functions, circulation and planning methods; a statement of principles and standards to govern city and local planning; a series of architectural studies and proposals for treatment of important concrete problems; and an atlas and description of the Regional Plan dealing comprehensively with the utilization of land and circulation in its various forms. Such is the promise in the preface to the series.

Some of the work within the New York Region will be helpful to other regions and may not need to be repeated. Other regional planning commissions may, on the other hand, desire to make similar studies regarding the existing conditions and trends within their regions.

The fact that the Regional Plan of New York has cost more than the amount of money expended in any other region is probably the result of several considerations: (1) No other region has presented a complete, comprehensive plan; (2) completion of the plan was not dependent on public appropriations but came from the Russell Sage Foundation whose directors were convinced of the need for the Regional Plan; (3) pioneer studies were necessary; and (4) the region contains the largest population of any in the United States, comprising nearly 1/10 of our entire continental population.

In the "Economic Argument for Regional Planning," contained in Volume I of the New York series, Mr. Norton is quoted as saying that in Chicago it was found that upon public improvements, wrongly planned because no one had looked ahead and which were later destroyed and replaced, the city had spent between 1871 and 1908 no less than $225,000,000.

In the New York Region there has been regional planning within regional planning—a sort of play within a play—in the case of Westchester County. Here in the last six years a remarkable county park system has been developed, involving, according to Jay Downer, Chief Engineer of the Westchester County Park Commission, a capital outlay in appropriations of about $55,000,000. But, says Mr. Downer, "Through the creation of new property values which have increased the County's total assessed valuation of taxable property from $788,029,026 at the end of 1923 to to $1,500,498,473 at the end of 1928, or practically doubled, the park program is easily carrying the cost of capital investment." In view of the fact that the Westchester County Park Commission charges fees for service which cover the cost of operation, the investment in the Westchester park and parkway projects resulting from sound planning, would certainly be taken into account by any conservative bank in the country for commercial loans.

But the question here is: How far did the expenditure of the $800,000 on the Regional Plan of New York contribute to the Westchester County project? The cost of such a regional plan may be considered as a sort of overhead expense on the part of a holding company. No arbitrary plan of distributing such overhead expenses would reflect the facts. On an outlay of $55,000,000, it is not probable that more than 1/100 of 1% of the cost of the regional plan could be allocated to studies or advice concerning

the Westchester County Park system as a regional project.

In the end it is probably wise to call any regional planning expense an indispensable overhead and stop there. Actual projects of improvements, under any sort of planning, are carried out by authorities charged with that responsibility —boards of estimate, municipal departments, village trustees, county commissioners, state officials. Planning bodies are seldom charged with the responsibility of putting their plans into effect. In the case of the National Capital Park and Planning Commission in Washington, the Commission existed as a park-purchase commission before it was charged with general planning powers and, therefore, in the acquirement of park areas, the Commission carries out its own plans within the limitations of annual appropriations by Congress. But this is an exception to the rule.

The large expenditures of public money are made for improvement projects—new roads, street widening, parks, playgrounds, civic centers, public buildings, bridges and other facilities. Regional planning costs but a fraction of the actual purchase of land or construction of utilities in putting the plan into effect. The crux of the matter lies in the cost of *not planning*.

In the New York region $800,000 has been spent to prepare a technical master plan. Billions will be spent in public projects within the region, and these will either be in conformity with the plan or out of relation with it. Who can doubt that these vast sums of money will be spent to better advantage *because* of the regional plan? Public opinion can and probably will force most of the major purchase and construction projects within the New York Region to conform to the plan. Without a master plan, two alternatives would be presented: (1) To spend a disproportionate amount of money in making piecemeal plans within the region, trying to guess how they would fit with other future projects; or (2) to proceed with no plan at all beyond that for the immediate project, possibly to find in a few years that the entire expenditure was wasted and that a new project must be undertaken to serve the needs which were not foreseen.

Regional planning is in its infancy. But it is now very generally recognized that from 70,000,000 to 75,000,000 additional people will be living in urban regions in the United States by the year 2000. In an economic summary, prepared under the auspices of the Federated Societies on Planning and Parks, under the title, "What About the Year 2000?", prediction is made that our rural population will not increase much and that by the year 2000, out of a possible national population of 185,000,000 probably 150,000,000 will be living in towns or in urban regions. Separate city and town plans for areas within their limits cannot provide efficiently for the articulation between adjoining local plans. As for achieving master regional plans, mere cooperation will not suffice. Cooperation and understanding are needed to *carry out* regional plans and undoubtedly cooperation and consultation are needed in their preparation. But the designing of highways, parkways and parks to serve the present and future populations to the best advantage, as well as the zoning of areas outside of incorporated towns and cities, are highly technical matters and need the services of technical men, looking at the problem as a whole, uninfluenced by the special interests of one community or another.

Let us not scrimp on the overhead regional planning expenditure which, if wisely expended, should prevent expen-

sive mistakes and wastes and which should stimulate local governments within the region to join in projects too vast to be possible for a single town. It is true that we have not yet found entirely acceptable machinery, which is adapted to conditions in all parts of the country, for carrying out regional plans. But if the regional plan is well conceived, graphically presented and kept before the people, the chances are that local governmental authorities will accept the recommendations contained in the plan for the succeeding projects as they become necessary or desirable. Who can suppose that the 12 volumes of the Regional Plan of New York and its environs will not serve as the guide within the region for all major projects of the present generation?

If conditions change, the people will understand that the plans should be modified. But it is not to be supposed that, with the plans and specifications all laid out for a region which may have a population of 27,000,000 people by the end of the century, the people will permit their public officials to depart seriously from the plan. If this assumption proves true, the $800,000 expended for surveys and plans presented in 1929, will constitute a bargain for the entire area. The fact that the money was a gift to the community does not in any way lessen the intrinsic value of the plans to the people of the region.

And so in every one of the regions where money is being spent to prepare a comprehensive plan, if the plans are good and based on sound technical advice, the investment will be a good one and will constitute an infinitesimal percentage of the money which in any case will be invested in public improvements during a single generation. Sound regional planning, kept up to date, is a cheap form of insurance against major errors and waste.

FINDING A BASE-YEAR FOR THE STUDY OF URBAN PROBLEMS

By HELEN C. MONCHOW

THE tendency in collecting data on past experience as a basis for future policy is to gather facts over as long a period as possible. The longer and more continuous the succession of facts the better the foundation is considered to be. In dealing with some problems, particularly those historical and descriptive in character, this procedure may be justified and may even strengthen the case. But this is not always true. The problem to be solved should be examined carefully to determine whether facts from the earliest period may not distort the picture and so furnish an unsound basis on which to build for the future.

Such a problem is encountered in any study of land utilization which has as its purpose the drafting of a plan for future action on the basis of past facts. Are data on land utilization—the number of lots recorded, to cite an actual case—as far back as 1830 or 1840 significant in estimating future needs? Or were conditions then so different from those prevailing in the urban land market today that inclusion of such data would invalidate the forecasts? In other words, quantitative data for the determination of future policies with respect to any urban problem should be taken only from a period in which conditions fairly comparable to those in the city of today have obtained. Hence, what may be regarded as a reasonable date of origin of the "20th century city."[1]

Like all attempts to place precise dates for the beginning or ending of social movements or economic phenomena, the answer to this question can be only approximate. Two factors in particular make dating the emergence of the 20th century American city difficult: the time factor and the size factor. The time element is a complicating influence because of the gradual settlement of the United States. Cities have grown up in the wake of the successive waves of settlement which have swept across the country. The injustice, therefore, of comparing the urban status of Philadelphia with that of Cincinnati, or St. Louis with Omaha, at a given time, is obvious.

In one sense the size factor may be regarded as a corollary of the time element. Differences in size, arising out of differences in age, complicate comparisons of American cities. Furthermore, the census definition of a city as a population group numbering 2,500 does not satisfy the prevailing concept of a city. On the other hand, precaution must be taken against considering as cities only the metropolitan centers. Between these two extremes lie many urban communities of varying sizes which tally with the current idea of what a city is. But the size of urban centers is not the major concern here, for size is not an adequate measure. More important for the problem at hand are the characteristics of a city. Examination of urban charac-

[1] The adjective "20th century" is used, instead of the phrase "modern city," because of the generally loose use of the term "modern," on the one hand, and its technical meaning in historical science, on the other. In the latter sense, of course, everything American is "modern." Hence, the phrase "20th century" seems more accurate, particularly since only American conditions are under discussion here.

teristics and functions cuts across the time and size factors and gives a much more usable measure of urban stature. What then are the characteristics of the 20th century American city? What are the conditions which caused its rise and when did these conditions appear and begin to exert their influence on city functions and structure?

The city of 1920 differs from cities of previous eras in three main particulars: (1) the development of certain economic activities along new and specialized lines as distinctly urban functions; (2) growth and expansion of public utility services; and (3) specialization of land uses. This does not mean that these conditions were completely absent in urban centers before 1900. The contention is rather that these three characteristics of the 20th century city are the product of, or were at least stimulated by, a striking series of changes which took place largely in the decade 1880 to 1890[2] and which suggest the former date as a turning point in urban growth and development.

These changes are of various sorts—functional, technological,[3] legal, governmental—and might be treated under such headings. But the three-part classification suggested seems more useful because it shows the interaction of the separate kinds of change. Two further qualifications may be mentioned. Application of this suggested date may not be possible for all cities. Local conditions will, of course, dictate whether 1880 is a logical choice. The investigators of "Middletown," for example, chose 1890 as the base year.[4] Finally, the following recital of events and developments is not intended to be exhaustive. It is designed merely to point out certain changes which have so influenced the economic life of cities as to justify limiting the collection of historical data to be used in formulating future policies.

I. Specialization in Urban Functions

In general, it may be said that cities of previous eras were the source of supplies for their surrounding areas and were in turn supplied by them. They were the centers of relatively small, self-sufficient areas. Cities still are distributing centers for their respective regions but today the tendency is away from urban self-sufficiency and toward specialization. In short, cities are now usually engaged in (1) large-scale production along specialized lines and depend upon (2) improved storage and

[2] Certain items included in this resumé may have appeared prior to 1880 while their actual influence may date from the period in question; or other items might have originated in this decade but not become effective until a later date. In spite of this elasticity which makes selection of a specific year more or less arbitrary, 1880 has been chosen as marking a new era in urban history.

[3] In the discussion which follows the technological factors may seem to be accorded too prominent a place. Particularly may this accusation be levied against the second section which describes the evolution of public utility services. This is in part the result of the very great importance of public utilities to city growth and the fact that in the writer's scheme of organization these basic industries are contributing factors in each of the separate phases of urban development. Furthermore, technological developments lend themselves conveniently to chronological treatment.

[4] "The further device has, therefore, been adopted in this investigation wherever the data available permitted, of using as a groundwork for the observed behavior of today the reconstructed and in so far as possible equally objectively observed behavior of 1890. The year 1890 was selected as the base-line against which to project the culture of today because of greater availability of data from that year onward and because not until the end of 1886 was natural gas struck in the city under study and the boom begun which was to transform the placid county-seat during the nineties into a manufacturing city. This narrow strip of thirty-five years comprehends for hundreds of American communities the industrial revolution that has descended upon villages and towns, metamorphosing them into a thing of Rotary Clubs, central trade councils, and Chamber of Commerce contests for 'bigger and better cities.'" Robert S. and Helen Merrell Lynd, *Middletown*, (New York: Harcourt, Brace & Co., 1929), p. 5).

transportation facilities and (3) the highly developed marketing machinery of today to distribute their local surplus and bring them in turn the things which they do not produce at home.

Growth of Large-Scale Production. The tremendous spurt in industrial activity in the United States which occurred toward the close of the last century is a well-known fact. But of particular interest here is the very marked upward trend of industry in the year 1880,[5] as shown by the increase in number of industrial establishments, number of wage earners, and value of product. This upward swing of the curves measuring industrial activity was the culmination, in part, of events of the period 1850 to 1870 when the "invention of technical improvements was increasing at the fastest rate,"[6] as indicated by the tremendous rise in the number of patents and designs issued.

Another characteristic of the period is the steady increase in size of industrial establishments, as shown by an increase in the number of wage earners and in value of product per establishment.[7]

The trend toward larger establishments is also seen in the great increase of primary horsepower used by manufacturing industries between 1869 and 1899, especially in the last of these decades. The tremendous spurt between 1889 and 1899 is, of course, largely the result of the new use of electric power, although consumption of power from steam engines and turbines increased over 75% during this decade. The influence of the central station electric industry, which dates from 1882, is reflected in the more than thirtyfold increase in electric horsepower operated between 1889 and 1899. In so far as this greater consumption of primary power denotes greater capital investment, it may be regarded as reflecting, in some measure at least, larger establishments and possibly an increased use of the corporate form of organization in order to secure the necessary capital.[8]

The ramifications of large-scale production are too numerous to be treated here. It will suffice to date this very marked development as a phenomenon of the last 50 years, resulting from extremely rapid and significant technological changes, and to point out its importance for urban development. The generalization will hold in most instances that industrial development and urban growth go hand in hand. Its effect on urban growth is largely through the channel of labor supply. The presence of a labor supply skilled in a given field is a signal for other producers of the same product to locate nearby and thus have access to that supply. From the point of view of specialization of activity large-scale production is of itself very highly specialized and calls to its vicinity certain other very specialized activities of a complementary or supplementary nature which in turn accelerate urban growth. Finally, the relation of large-scale production to city structure comes through its effect on specialization of land uses, as a result of its dependence on transport and its detrimental effect on other land uses.

Warehousing Development. A necessary accompaniment of this tremendously

[5] See "Integration of Industrial Operations," *Census Monograph III*, (Bureau of the Census, 1924), p. 29.

[6] *Ibid.*, p. 25.

[7] *Ibid.*, pp. 28 and 31, respectively. But neither of these measures is satisfactory because of increased productivity per wage earner, on the one hand, and changes in the value of the dollar, on the other. The data are still further invalidated by inclusion of establishments "of productive industry" regardless of whether they are producing "for the *general* market."

[8] Data on the use of the corporate form of organization as an index of large-scale production are not available until the Census of 1905.

increased production has been the development of storage facilities as a link in the process of distributing these surpluses in larger or smaller quantities when and where needed. The warehouse industry itself experienced very considerable change and progress during the last decades of the 19th century. In its early stages it had been a by-product of the railroad industry but after the Civil War warehousing started to separate itself from railroading, slowly at first because the railroads held the advantage in being able to offer special storage privileges to certain favored shippers. The independent warehouse companies, however, secured separation of the warehouse and railroad functions as a result of an investigation by the Interstate Commerce Commission[9]. This marked the beginning of progress in the industry, particularly along the lines of specialization. Grain storage was first to split off, then the cold storage industry. The latter had received impetus from the invention of the ammonia-absorption process (1860) which had come into very general use by 1890. The warehouse industry was aided also by further development of the law of bailments, which clarified the rights and duties of the shipper, the warehouseman, and the consignee. Laws regarding warehouse receipts and bills of lading culminated in the Uniform Warehouse Receipts Act of 1916 and the Federal Bill of Lading Act of the same year. Facilitation of the movement and storage of large quantities, both of manufactured and raw materials, contributed to the development of specialized, large-scale production.

The warehouse industry is but one link, however, in the chain of the distributive process. Warehouses bring with them a whole group of activities which profit by location near the storage sites. Thus central markets, wholesalers' and jobbers' markets, brokerage offices, manufacturers' branch offices, inspection headquarters, and organizations developed especially to handle the financing of commercial transactions all find it convenient to locate as near as possible to one another and to the initial point of distribution. Each one of these functions has become a highly specialized activity, which finds its best opportunities in urban areas. Many of them have undergone very considerable changes in the last 40 or 50 years, which are no doubt of great significance for the development of urban functions. However, a brief description of certain changes in retailing will illustrate both the nature and scope of the transition to 20th century marketing methods.

Changes in Marketing Machinery. A third type of specialization in urban functions is the expansion in the late 19th century of trade and commerce. One evidence of greater trade activity is the increased cost of distribution. According to one writer, "in the fifty years between 1870 and 1920, the cost of distributing the necessities and luxuries which we consume has nearly trebled, while the cost of producing them has been reduced by more than one-fifth."[10] The great increase in volume of manufactures, as a result of improved technique, has caused increased competition for markets and thus a greater cost of distribution. Further evidence is adduced from the steadily increasing numbers of people engaged in distributive activities.[11]

[9] H. A. Haring, *Warehousing*, (New York: Ronald Press Co., 1925), pp. 9 and 13. An interesting aspect of this separation was the fact that it was the result in part of the organized efforts of the independent warehousemen. The movement toward association of the members of separate trades and industries for promotional or protective purposes has experienced rapid growth and greatly increased influence in the period since 1880.

[10] Ralph Borsodi, *The Distribution Age* (New York: Appleton Co., 1927), p. v.

[11] *Ibid.*, p. 12.

Three types of commercial activity which are strictly urban and which belong to the period since 1880 are the large department store, the mail order house and the chain store. The precise origin of the department store is not known but most writers are agreed that it is a phenomenon of the last 50 years. John Wanamaker, who is generally regarded as one of the pioneers in this field, started his department store in Philadelphia in 1876 and his New York branch in 1896. The mail order house too is a product of the last half-century. Montgomery Ward and Company started business in 1872 in Chicago and was followed soon by other concerns. The growth of this type of retailing was greatly stimulated by the advent of the parcel post delivery (1912). Finally, the chain store, which has had a particularly striking growth in the last 15 or 20 years, really got its start toward the end of the 19th century and enjoyed a period of rapid expansion in the eighties.[12]

These changes in the methods of retailing were accompanied by equally important changes in the field of credit. The evolution of endorsed accommodation paper and endorsed trade paper reached its peak about 1880, after which came the development of the present open-account buying with discounts for cash and short-term payment.[13] This system of buying was accompanied by the development of the doctrine of "implied warranties" which tended to replace the caveat emptor philosophy. Responsibility for delivery came to rest on the seller instead of the buyer.[14] Another companion of open-account buying was the mercantile credit agency[15] and finally about 1890 credit departments in banks. The establishment of these agencies took from the traveling salesman what had been one of his major functions, that of ascertaining the financial condition of his customers. The result of these changes was specialization of the financial function in marketing. The credit information agency and the financial agency both emerged as a result of greater independence of the buyer from the seller.

For summary purposes, these three functions—mass production, storage and other middleman functions, and retailing—are conveniently epitomized in their significance for urban development in the history of the clothing industry. Large-scale manufacture of clothing began to emerge after the Civil War. At first the cutting only was organized on a factory basis, for the actual making of the garments continued for some time to be farmed out, and is still so handled in many instances and places. The manufacturer was thus designer, cutter, financier, and wholesaler. Frequently, however, a jobber took over the process of financing and holding the garments until purchased by the retailer. Finally, in the nineties came the so-called "inside" shop where all manufacturing processes were done under one roof. In this industry are clearly visible large-scale production, important functions performed by the middleman, particularly in contract-shop organization, and finally large-scale retailing, frequently by department stores. From the point of view of urban functions this industry furnishes an excellent example of specialization and the necessity for urban location, particularly of such middleman func-

[12] Fred E. Clark, *Principles of Marketing*, (New York: Macmillan Co., 1922), p. 218.

[13] C. A. Phillips, *Bank Credit*, (New York: Macmillan Co., 1920), p. 125.

[14] The parallelism between this development and the evolution of the law of bailments is interesting.

[15] These agencies had been established early but were only becoming effective toward the end of the 19th century.

tions as financing, jobbing, and contract work.

II. Expansion of Public Utility Services

The second major difference which distinguishes the city of 1920 from the pre-Civil War city, for example, is that in the earlier period many of the functions which are now performed by the municipality or by private companies were the responsibility of the individual to supply for himself. He not only relied on his own means of transportation to a very large extent, but he secured his own water supply, furnished the means for lighting his own home and in some instances had to supply his share of the street lighting, and depended on the post or personal visits for communication.

Perhaps the most important of these services which emerged from the realm of individual domination was mass transportation, which experienced its major development in the late eighties. Railroad construction, of course, antedated 1880 by several decades but its benefits cannot be said to have accrued until after the Civil War. Furthermore, the use of rail transport was greatly stimulated by many important improvements in railway equipment which were perfected and put into operation during the period 1860 to 1890. The Bessemer steel rail, electric signal systems, mechanical loading devices and the adaptation of the four-wheeled truck to car construction were developments of the early part of this period. In 1872 came the Westinghouse airbrake and in the following year the automatic coupler was patented. The first refrigerator car was used in 1871 and the first stock car 10 years later. Pullman cars were an earlier invention (1867) and all-steel cars a later development (1894). The sum total of these improvements increased the speed of transport with better control, facilitated the handling of a much larger volume of both freight and passenger traffic, and made possible the transportation of food products over long distances. These developments were especially important for intercity communication.

Intra-city mass transportation belongs almost exclusively to the period since 1880. Of course, horse cars had been in use since early in the 19th century and cable cars antedated the electric railway by several years. But these belong to a different cycle in the development of urban transportation and could never have attained the necessary capacity or efficiency to meet the demands of present-day urban traffic. Richmond, Virginia, is credited with the first electric railway system, established in 1888, although other cities had had short experimental lines before that date.[16] Following these pioneers, the extension of electric surface lines was rapid[17] and at the turn of the century the transition from horse to electric power is said to have been practically complete.

Another phase of the traction problem was the development of inter-urban service. This was of two kinds. Electric service, which was introduced about 1894 or 1895, was competing with steam commutation trains by 1902. The latter type of service was already developed to a considerable extent prior to 1880. In the region of Chicago, for example, reference was usually made to

[16] Saratoga Springs, New York, 1883; Cleveland and Kansas City, 1884; and Appleton, Wisconsin, shortly thereafter.

[17] The report of the General Electric Company for the period 1893–9, shows a tremendous percentage increase in orders for railway equipment. (E. W. Byrn, *Progress of Invention in the 19th Century* (New York: Munn & Co., 1900), p. 61.

the commutation rates to suburbs where subdivisions were being boomed.[18]

The final transportation development was the appearance of the different forms of so-called rapid transit. In New York City the elevated railway appeared as early as 1878 but it was operated by steam. Not until 1901 did the third-rail type appear. New York also completed the first subway in 1904.

Development of other electric utilities has been almost as important in the evolution of the 20th century city as agencies of mass transportation. The first central electric station in New York in 1882 was of signal importance to industry, as already mentioned, and to commercial and home use of electricity as well. Industrial use of electric power was greatly aided by two events of the decade 1880 to 1890. The steam turbine appeared in 1884, greatly increasing the efficiency of producing electricity, and in 1888 Tesla invented the alternating current generator which reduced production costs, as well as utilization costs to the consumer, and made electricity more easily applicable to industrial purposes. Commercial and domestic uses of electricity were furthered by the invention of the Brush arc lamp in 1878, which revolutionized street lighting, and the invention in the next year of the incandescent lamp. The use of electricity for lighting purposes (residential, commercial, industrial, advertising and street purposes), for commercial and industrial power and heating, and for urban and inter-urban transit has raised the central station industry to the forefront of influences responsible for the 20th century city. Professor Glaeser says, "In truth, the central station represents the heart of modern city life."[19]

The decade following 1880 also witnessed development of the telephone. The first local exchange was established in 1878 in New Haven and expansion of the industry began at once and at an enormously rapid rate. The American Bell Telephone Company was organized in 1880 under a special act of the Massachusetts Legislature. At the close of the year 1880, 30,872 telephone stations were in use in the United States; in 1890 this number had increased to 211,503; and by 1900 to 676,733.[20] Professor Glaeser in commenting on the contribution of the telephone to the process of urbanization refers to it as an aid "in both the centralization and decentralization of productive processes".[21]

The gas industry, both manufactured and natural, had been fairly well developed before the eighties. Manufactured gas companies had been formed in Baltimore as early as 1816, in Boston in 1828, and the charter of the Chicago Gas Light and Coke Company dates from 1849, but street lighting was the major use to which their product was put. Some progress in the application of gas to home lighting was made between 1865 and 1875 but the real advance in the industry dates from 1873. In that year the water gas process was developed which materially reduced production costs and was finally adopted by 1880 even by the coal gas manufacturers with a consequent increase in the sales of gas. The next important developments in the industry were the inventions in 1885 of the Welsbach mantle and of

[18] Everett Chamberlin, *Chicago and Its Suburbs* (Chicago: T. A. Hungerford & Co., 1873). Reference is made to the number of trains per day and annual commutation rates to Auburn, Austin, Hinsdale, Ravenswood, River Forest, Wilmette, Winnetka, etc.

[19] Martin G. Glaeser, *Outlines of Public Utility Economics*, (New York: Macmillan Co., 1927), p. 59.

[20] American Telephone and Telegraph Company, *Report* of the Board of Directors to the Stockholders for the Year 1927, (New York, 1928).

[21] Glaeser, *op. cit.*, p. 77.

the instantaneous, automatic gas heater which gave impetus to the use of gas for lighting and heating.

Water utilities had assumed relatively modern proportions by 1880, at least so far as adequacy of supply was concerned. Plumbing and sanitary devices developed much more slowly than provision for water but the most important problem awaiting solution in the eighties was that of purification of the water supply. The dangers of typhoid fever threatened to defeat the growth of large cities which were not located near the oceans or other very large bodies of water. In 1883 or 1884, under the Massachusetts State Board of Health, Hiram F. Mills and William T. Sedgwick discovered the secret of water purification and solved the problem of sewage disposal for large cities, which had been a limiting factor in their growth. "Modern sewage science has developed principally in the last half-century, coincident with a knowledge of sewage as a carrier of disease, particularly of typhoid fever, with the general use of baths and indoor toilet facilities, with the large industrial use of water, and with the paving of streets which has facilitated the run-off of rain and melting snow."[22]

The evolution of street paving, however, has other implications than its usefulness in helping to solve drainage problems. American cities seem to have been very slow in surfacing their streets, and where steps were taken to improve them, cobblestones seem to have enjoyed an unusually long and unchallenged reign, for even the materials which are used today did not begin to appear until 1870. In that year the first asphalt pavement was laid in Newark and in the same year brick was used in Charleston, West Virginia. Concrete made its appearance first as a base for street pavement about 1888 and soon after was used as a pavement. Emergence of the science of street and highway design and construction belongs also to this period. In the decades immediately preceding 1880 attention had been focussed on railway transport problems to the neglect of road construction. Impetus was given to the interest in streets and roads, no doubt, by the bicycling enthusiasm of the eighties and nineties and before that influence had completely waned the automobile began to take its place as the standard bearer of the good-roads movement. The installation of pipes, conduits, wires, tracks, lighting fixtures, etc., required by the utilities, also had an influence on street and road construction.

The effects of these technological developments can be touched upon here only in their relation to the other two characteristics of the 20th century city, i.e. specialization of urban functions and specialization of land uses. The application of a new source of industrial power (electricity) and the perfection of another (gas) were, of course, immensely important stimuli to the growth of industry, which in turn was a dominating factor in urban development. Facilitation of communication (telephone and telegraph) were of equal importance to progress and change in the marketing field. Together they have made it possible for the retailer to carry a much smaller stock than he could when he had to depend on his semi-annual visits to the wholesaler or the visits to him of the drummer. Finally, transportation development is the red thread running through all these changes. The prime importance to industry of the means for interchanging the surplus products of one highly specialized area with the

[22] Lent D. Upson, *Practice of Municipal Administration*, (New York: Century Co., 1926), p. 469.

surplus from another is obvious. The same mechanism which made easily accessible the food supply for urban populations and the materials for quantity production along specialized lines, also made possible the distribution of the surplus. Yet the statement is made that accessibility is more important to trade and commerce than to industry. The almost absolute dependence of the mail order house on rail transportation is obvious, as is the close connection between warehousing and chain store and department store operation. Equally important to the department store, on the other hand, is the development of intra-city transport. Transportation thus coordinates both the specialized urban functions and the specialized nature of present-day urban land utilization. From the point of view of the urban dweller, the growth of public service industries which took place in these decades just preceding the 20th century helped to alter materially the domestic urban establishment, by removing it still farther from its relatively self-sufficient state of 1830 or 1840. In short, the 20th century city might be defined, without too great overstatement, in terms of public utilities.

III. Specialization of Land Uses

City structure has unquestionably undergone marked changes in the last 50 years as a result of both the specialization of urban functions and the development of public utility services, particularly transportation. To a certain extent specialization of urban land uses merely reflects those developments. The growth of mass transportation has led, on the one hand, to the concentration of retail stores at the center of the city and, on the other hand, has promoted the spreading out of the residential area and its segregation from the business and industrial districts. The telephone has had a similar influence on the residential areas. The result, or at least an accompaniment, of these changes in urban functions and the conditions of urban life, has thus been a marked change in city structure.

Other influences too have joined to alter the city pattern. Perhaps the most striking change has been caused by the vertical expansion of cities, which is a phenomenon dating from the late eighties. Two specific developments of this time brought about the change: the invention of the steel-frame building and, coupled with it and inseparable from it, the perfection of the elevator. One of the chief contributing factors in the development of the skyscraper was the introduction of Bessemer structural steel commercially in 1884. The Home Insurance Building in Chicago, completed in 1885, and the Tacoma Building in the same city built in 1886–7 are the examples usually cited of the first use of the steel-shelf principle. Other somewhat later developments which assisted skyscraper production were the adaptation in 1895 of the hoisting machine to building purposes and the cheap production of Portland cement after 1900, following much experimentation during the eighties and nineties.

Elevator development belongs also to this era and helped to make the skyscraper the revolutionary influence that it has been. Steam elevators had been in use some time prior to 1880 and hydraulic elevators date from 1870 but both these were used almost exclusively for freight service. Modified hydraulic elevators for passenger use appeared in New York City in 1878 "but it was not until the installation of the first successful electric elevator in 1889, that the

problem of vertical transportation was really solved."[23]

Tall buildings have had two major effects on city structure. Skyscraper construction has permitted more intensive economic development of certain urban sites which have become especially valuable by reason of the growth of cities and the increased accessibility of these sites as a result of improved transportation facilities. The second has to do with the amount of land required by cities. In so far as these buildings are used exclusively for business and commercial purposes, they force residential uses to the fringes of the city but in so far as they are used for residential purposes they tend to reduce urban land requirements. One or both of these effects may be observed at a given time.

Suburban movements, however, did not wait upon skyscraper development. They had begun, to a certain extent at least, 15 years before the revolution in construction. Steam commutation service, which was fairly advanced during the seventies, was one of the chief talking points for the salesmen of suburban real estate. The movement was more than a mere exodus to the outskirts of the city; it was characterized by a new element which may have been an outgrowth of the fact that so many utility services were available to urban dwellers. The marketing of large areas of land to which nothing but a few stakes had been added to distinguish it from the surrounding territory began to meet the competition of land which was at least partially prepared for use. In other words, we have the appearance of what has been called the "subdivision development" as distinguished from the bare subdivision. The former includes, besides the parcelling of land into building sites, the preparation of those lots for use. Riverside, Illinois, which was begun in 1869 was one of the pioneers in this field and the Roland Park development in Baltimore was another which set the pace for future high-grade subdivision activities. These developments mark a new era in land utilization. Sale for use rather than for speculation is the bench mark.

These changes in the urban land market are directly related to the suburban movement, which as a measurable phenomenon seems to date from approximately the turn of the century.[24] Among its contributing factors, of course, are subdivision developments and improvement of transportation, especially the automobile.

Parks and recreational areas are in themselves examples of specialization in land utilization. The urban growth together with the development of public services, particularly transportation, pushed the undeveloped areas of cities far beyond the actual boundaries of urban centers. The need, therefore, for open spaces within the limits of the city became urgent. The movement was greatly handicapped by the lack of enabling legislation for securing land for such purposes. Before 1850 not only the necessary legal powers were lacking but also the machinery for handling park areas. New York, however, led the way with the laying out of Central Park in 1857 and since that time states and municipalities have passed the necessary legislation and numerous court decisions have clarified the legal points. But actual park expansion was slow and "with the exception of a few of the larger cities, the number of parks in most of the communities prior to 1880 was negligible . . . . and up to 1890 there had been

[23] W. C. Clark, "The Construction Industry," in *Representative Industries in the United States*, (W. T. Warshow, ed.), New York: Henry Holt & Co., 1928, p. 194.

[24] H. Paul Douglass, *The Suburban Trend*, (New York: Century Co., 1925).

no general awakening to the importance of parks."[25] Playground development belongs almost entirely to the 20th century.

Finally, the whole idea of specialization in urban land received recognition with the development of regulation of land use, and realization that different types of use required special treatment. Regulation of the use of urban land had its beginnings in building codes, which are in turn an outgrowth of a variety of regulations having to do with fire limits, sanitary requirements, tenement house laws, and finally building inspection and building permits. Many of these separate forms of regulation antedate 1880 by several years but unified control of building construction and repair seems to date from the eighties when many cities established departments of building inspection. The issuance of building permits seems to coincide in some cases with the beginnings of inspection and in other cases was a later development. Regulation of building heights followed early in the present century.[26] Effective recognition of the specialized nature of urban land use, however, came with the advent of zoning.[27] Evidence of some appreciation of problems involved in different kinds of land use is found in the relatively early existence of such bodies as sewage commissions, water commissions, etc.,[28] but their interest was more from the administrative than the planning angle, although they were in many cases the forerunners of planning bodies.

Conclusion

While the 20th century city is characterized by a new specilization of functions, expansion of public-utility services and increased specialization of land uses, not all the separate items which have been mentioned as contributing to these three major conditions are present in every city. Nor need they all be present in every community before it can appropriately be called a city. The number and kinds of these services and functions which are present depend on (1) the size of the city, (2) the age of the city, and (3) local conditions. But taken together in their potentialities for affecting city growth and structure they form a mass of evidence which supports the selection of 1880 as a reasonably logical starting point for measuring urban trends.

The evidence here advanced is strengthened by examination of the census population figures. The decade 1880-1890 marks a definite change in population trends in the United States. Since 1880 a declining proportion of the population of the country has occupied rural districts. The number of communities in the urban class has also increased more rapidly since 1880. Whether these figures show a cause or an effect relation is difficult to say. Did the increase in urban population create a demand for these changes and improvements or did the amenities, conveniences and opportunities of urban life cause the influx of population to cities? On whichever side the responsibility lay, the coincidence of the two facts of urban growth and urban improvements is not without significance. Together they mark a turning point in urban history to be considered in quantitative studies.

[25] *Bulletin No. 462*, United States Bureau of Labor Statistics, p. 31.

[26] Boston was first to have comprehensive building height regulation (1904).

[27] In 1909 Los Angeles established use districts but credit for the first comprehensive zoning ordinance belongs to New York (1916).

[28] Boston furnishes illustration. That region had a Metropolitan Sewage Commission in 1889, a Metropolitan Park Commission in 1893, and in 1901 the Sewage, Water, and Park Commissions joined to form the Metropolitan District Commission.

DEPARTMENTS

The departments of the JOURNAL are edited specifically with regard to their interest to the readers who are especially concerned with the economic problems of land and public utilities. For the most part the material for the departments will be prepared by members of the staff of the Institute for Research in Land Economics and Public Utilities.

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SUMMARIES OF RESEARCH

LENGTH OF SERVICE OF UTILITY COMMISSIONERS IN MASSACHUSETTS

As one part of a study of utility regulation in Massachusetts, data on the tenure of office of the commissioners were gathered from the published reports. This was done because of a conviction that the human factor is fully as important in governmental administration as the laws which formally mark out the limits of authority. In this note attention is focused on length of service of utility commissioners, in years, to the nearest half-year; the temptation to explore more interesting by-paths, such as the reasons for appointment and resignation, age, qualifications and political affiliations of the commissioners, occupations subsequent to public service, political considerations influencing continued or discontinued service, was rigorously restrained. Moreover, for this note reliance was placed solely on the Commission reports. In several instances, for example, the exact date of appointment or retirement was not shown, and recourse was had to dated opinions in order to estimate the fact sought. Consequently absolute accuracy is not claimed.

The relatively long history of commission regulation in Massachusetts enlarges the sample but also complicates this inquiry. The first standing Commission, with continuous subsequent history, was appointed by the Governor, "with the consent of the council," in 1869. Since then, four differently-named boards have had varying degrees of authority over the several types of utilities. These eras of Commission history are as follows:

Railroad Commission, 1869–1913*
Public Service Commission, 1913–1919†
Gas and Electric Light Commission, 1885–1919‡
Department of Public Utilities, 1919–date.

*This Commission is the classic illustration of the so-called "weak" or recommendatory bodies.

†The Highway Commission, whose authority over telephones and telegraphs was transferred to the Public Service Commission, is omitted from this inquiry.

‡Originally this was merely a Gas Commission; authority over electric companies was given in 1887.

Complications arise from the varying number of members of these Commissions as well as from the varying terms of appointment. The Railroad and Gas and Electric Commissions were composed of three members appointed for three-year terms, after the usual staggered appointments in the first two years. The Public Service Commission was a five-man board with five-year terms until 1918, when it was reduced to three members. With the present Department, which combined the functions of the Public Service and Gas and Electric Commissions, the board of five with quinquennial appointments was restored.

In the 60 years of commission history, 44 individuals have held office on one or more boards. Considering the Commissions separately, the aggregate number of appointees was as follows:

	Years in Existence	Total Number of Individual Members*
Railroad Commission	44	19
Gas and Electric Commission	34	14
Public Service Commission	6	10
Department of Public Utilities	10†	7

*The aggregate number of office-holders (50) exceeds the total number of individuals serving because six men served on successive commissions.

†To August, 1929

Length of Service

In ascertaining the number of years' service by each individual, a few difficulties were encountered where exact dates of appointment or separation were lacking. Rather than checking laboriously through newspaper files or other sources, the signed and dated opinions of the board or other evidence in the Commission reports were scanned to determine the month and day as precisely as possible.[1] The present commissioners of the Department of Public Utilities were credited with service to August, 1929, though obviously their full terms of service have not elapsed.

For convenience in arraying the figures, half-years were neglected in Table I. The most noticeable features of this tabulation are: (1) Over one-fourth (12) of the individual members held office for 10 years or more, with two rounding out a quarter-century or more of service; (2) The median falls between the fourth and fifth years of office-holding; (3) The slight modal grouping at the third year can be partly, perhaps largely, explained by the predominance of three-year appointments. If 15-years' service be taken as constituting a career, then five commissioners may be regarded as "career-men" in this form of administrative regulation; if 12-years' service is used, there were eight career-men.

TABLE I. YEARS OF SERVICE OF MASSACHUSETTS UTILITY COMMISSIONERS, 1869–1929.

Number of Years Served	Number of Individuals
29	1
25	1
19	1
16	2
14	1
12	2
10	4
9	1
8	2
7	3
6	2
5	3
4	4
3	7
2	2
1	6
Less than one	2
Total	44

In computing the average number of years served per member, the half-years were taken into account. Disregarding the changing nomenclature of the Commissions, the total number of years served by all commissioners was 310, the 44 incumbents serving on the average 7.0 years each. Similar methods for each Commission yielded the averages noted in Table II.

The dominance of the three-year term and the possible tendency to inertia in office-holding suggested a frequency distribution with a class-interval of three years. This was done for each Commission (Table III). The distribution, disregarding Commission

[1] On the work-sheets, the years of service were calculated to the nearest half-year. Service of three months or less was counted with the preceding full year; from 4 to 8 months, inclusive, was counted a half-year; and from 9 to 11 months, inclusive, as a full-year.

TABLE II. TOTAL NUMBER OF YEARS SERVED, NUMBER OF COMMISSIONERS, AND SIMPLE AVERAGE DURATION OF SERVICE, MASSACHUSETTS UTILITY COMMISSIONS, 1869–1929.

Commission	Total Number of Years of Service	Number of Commissioners	Average Duration of Service (Years)
Railroad	131.	19	6.9
Gas and Electric	101.5	14	7.2
Public Service	28	10	2.8
D. P. U.	49.5	7	7.1

identities, is not the sum of the frequencies for each Commission because six members served on more than one board and their terms of service were split. It is at once obvious that there is no clear modal grouping in any one class interval[2]. The influence of the three-year term seems greatest in the case of the Gas and Electric Commission.

Service of Commission Chairmen

The chairmen of the Commissions were singled out for separate study on the theory that their official life was more hazardous. This proved to be the case so far as such figures prove the point. In all, 16 individuals have at one time or another been chairmen;[3] one of these served 20 years in that capacity (a career-man), and one other has served to date virtually 10 years. The number serving three years or less and the number holding the chairmanship from 7 to 10 years were the same (6). The median point is in the fifth year of such service.

Averages support the assumption more pronouncedly. The average length of tenure of the chairmanship, combining all Commissions, was 5.8 years, as compared with 7-years' average duration of commissionerships. Since a few chairmen served as commissioners before being elevated, a separate computation was made of duration of commission service of those who occupied the chairmanship. Disregarding the changing identities of the Commissions, an average of 6.6 years was spent on the Commission by those who were chairmen, approximately a year longer than they retained the office of chairman.

Retirements

As a beginning in the analysis of cause of leaving commission work, a general classification of reasons for retirement was made and a tabulation prepared by five-year periods for each Commission (Table IV). The groups labeled "resigned" and "expiration of term" deserve further analysis, for which other sources of information than Commission

[2] If class intervals of four or five years are used, an indisputable modal grouping is found in the intervals from 1 to 4 and 1 to 5 years respectively.

[3] Chairmen were designated by the Governor except in the case of the Public Service Commission. The statute establishing that Commission required selection of a chairman among and by the Commissioners themselves every time a change in the personnel occurred.

TABLE III. FREQUENCY DISTRIBUTION OF DURATIONS OF SERVICE BY MASSACHUSETTS UTILITY COMMISSIONERS, BY COMMISSIONS AND DISREGARDING COMMISSION IDENTITIES, 1869–1929.

Class Interval	Number				
	Railroad	Gas and Electric	Public Service	D.P.U.	All
Less than 1 year	0	1	2	0	2
1–3	5	6	4	1	12
3.1–6	5	3	2	2	12
6.1–9	3	1	2	1	6
9.1–12	3	0		3	4
12.1–15	2	1			3
15.1–18	0	0			2
18.1–21	1	0			1
21.1–24		0			0
24.1–27		1			1
27.1–30		1			1
Totals	19	14	10	7	44

reports must be tapped. It would be interesting, if possible, to obtain information on forced, as distinct from voluntary, retirements. Some of the commissioners who resigned probably did so under pressure, and some because of a desire to "move up" politically or judicially or to re-enter private life. The Commission reports disclose some of these latter instances. Similarly, of those who ceased commission work at the expiration of their terms of appointment, some may have refused re-appointment for a variety of reasons, while others may have wished, but failed to obtain re-appointment.

TABLE IV. CAUSES OF RETIREMENT OF MASSACHUSETTS UTILITY COMMISSIONERS, BY COMMISSIONS AND BY FIVE-YEAR PERIODS, 1869–1929.

Commission and Period	Resignation	Expiration Of Term	Expiration Of Office	Death	Legal Disability	Totals for Period	Grand Totals For Period—All Commissions
Railroad							
1869–1874 incl.		2				2	2
1875–1879		2				2	2
1880–1884	2	2				4	4
1885–1889				1		1	2
1890–1894	1			1		2	8
1895–1899	1			2		3	3
1900–1904	1					1	2
1905–1909	1					1	2
1910–1913	1	*	*			1	1
	7	6		4		17*	
Gas and Electric							
1885–1889	1					1	‡
1890–1894	2	3			1†	6	‡
1895–1899						0	‡
1900–1904		1				1	‡
1905–1909		1				1	‡
1910–1914				1		1	‡
1915–1919		1	2			3	‡
	3	6	2	1	1	13§	
Public Service							
1913–1918	2	1			1♭	4	5
1918–1919	1		3			4	7
	3	1	3		1	8**	
Department of Public Utilities							
1919–1924	1					1	1
1925–1929	1					1	1
	2					2	
Grand Totals	15	13	5	5	2		40

*All three members of the Railroad Commission, when it was superseded by the Public Service Commission, were re-appointed to the new board as provided by statute. Otherwise, two would have been retired on account of expiration of office and one on account of expiration of term of appointment. Since there was no break in their service at this time, these changes are not recorded in this table. For the above reason, moreover, the total for the Railroad Commission is less than the total number of incumbents (Table III). An additional discrepancy in these figures occurs because one man resigned, was re-appointed after an interval of a year, and then served until his death.

†Cause recorded was "resigned by reason of law prohibiting Board members from engaging in other business."

‡Period totals for Gas and Electric Commission were combined with those for Railroad and Public Service Commissions.

§One member of the Gas and Electric Commission was appointed to the Department of Public Utilities without break in service.

♭One member retired on account of age, in accordance with Acts of 1911, c. 532, sec. 3.

**Two members of the Public Service Commission were appointed to the Department of Public Utilities without break in service.

At the present time, however, only the facts of the bare published record of the Commission are offered in Table IV. The dominance of resignations and term expirations might be expected from the looseness of these classes, and for the same reason the relation between the totals in these two classes is a doubtful basis for any conclusions. The periods of greatest instability were definitely two: the Public Service Commission era during the war years (1913-1919), and the period, 1890–1894, when the personnel of the Gas and Electric Commission shifted rapidly.

To learn whether duration of service has any influence upon the cause of retirement, Table V was prepared. Only a slight tendency is shown for members with longer service records to go out of office through lapse of appointment rather than resignation. Among those who served more than the average period, the tendency is perhaps a little more evident in the direction of retirement for obviously personal reasons. Taken together, with due notice of the smallness of the sample, these two tendencies lend some, though scanty, support to the alleged inertia of office-holding.

The group of career-men, already suggested, are worth separate study. The size of this group is somewhat arbitrary. Previously, 15 years or more of service was used as a benchmark, which is equivalent to five three-year terms and approximately half of a generation's working life. A lower duration of service, say 12 years, might be justified if other factors were taken into account. These other considerations are the general insecurity of appointive offices in political government where civil service rules do not apply, the age and maturity of commissioners when appointed, the necessity, in changing to a private occupation, of retiring before age becomes a handicap in private work.

Assuming, without checking the weight to be accorded these factors, that 12 years or more of service denotes the career-men, then eight men, almost one-fifth of the total number, were in this group. What were the causes of their retirement from office? Three died while in office, two retired on account of old age, one resigned to be appointed a judge, one was not re-appointed when a commission was superseded, and one is still serving. It would be interesting to

TABLE V. CAUSES OF RETIREMENT BY LENGTH OF SERVICE GROUPS, MASSACHUSETTS UTILITY COMMISSIONERS, 1869–1929.

Length of Service	Number	Causes of Retirement				
		Resignation	Expiration of Term	Expiration of Office	Death	Legal Disability
Less than 3 years	10	5	4			1
3–5 incl.	14	5	5	3	1	
6–8	7	3	1	1	2	
9–11	3	1	2			
12–14	2				1	1
15–17	1	1				
18–20	1		1			
21–23	0					
24–26	1			1		
27–29	1				1	
Totals	40	15	13	5	5	2

learn whether or not this experience in Massachusetts is unique and to examine the work of these career-men in contrast with that of other commissioners.

Turnover

The fact that the aggregate number of retirements was virtually the same as the number of individuals serving on the Commissions does not, however, indicate a turnover of around 100%. Included in the retirements are the instances where a commission was abolished, though the individual might be re-appointed on the superseding commission. Moreover, the length of the term of appointment must be reckoned with, in view of the tendency to inertia in office-holding previously mentioned.

Accordingly, and tentatively, the following method of computing turnover is ventured. Assume that appointments were only for full terms specified by law, that all appointees served their full terms, and that a different individual was appointed each term. On this basis and taking into account staggered appointments as well as differing terms, 45 appointees to the Railroad Commission were possible, 35 to the Gasand Electric Commission, 11 to the Public Service Commission, and 15 to the Department of Public Utilities. Dividing these potential commissioners into the number of actual incumbents gives the results shown in Table VI.

TABLE VI. COMPUTED TURNOVER RATES, MASSACHUSETTS UTILITY COMMISSIONERS, 1869–1929.

Commission	Possible Number of Appointees	Actual Number of Incumbents	Turnover Percentage
Railroad	45	19	42%
Gas and Electric	35	14	40
Public Service	11	10	91
D. P. U.	15	7	47
Totals	106	50	47

The turnover percentages appear to conform closely to the average durations of service for the four Commissions (Table II). Combining all Commissions on the above basis, the average over-all turnover was 47%, indicating length of service for slightly more than two terms.

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is omitted from this issue because the material is being reworked and new data added to enlarge the scope of the summary. Publication will be resumed in the November *Journal.*

COMMENTS ON LEGISLATION AND COURT DECISIONS

THE O'FALLON OPINIONS OF THE SUPREME COURT

THIS widely heralded "greatest lawsuit in history"[1] ended in another stalemate on the valuation problem. Despite the benefit of talented counsel the majority emerged with a technical decision accompanied by an opinion which appears in no way to progress toward a solution of the valuation controversy, unless perchance the disappointed expectations lead to a legislative declaration of what shall hereafter be considered the "law of the land" on valuation. But if Mr. Justice McReynolds' opinion for the majority leaves one cold, the long dissent by Mr. Justice Brandeis excites admiration for its dialectic qualities and consideration of economic factors, and the relatively terse, separate dissent by Mr. Justice Stone shows a realistic appreciation of the Commission's problem. Probably the majority opinion will be more often cited, but the dissents more frequently quoted.

The publicity given to the case makes unnecessary an exhaustive review of the facts. Of the two short railroads involved, one was a switching and the other a coal-carrying road operating in and around St. Louis, officered by the same individuals, and owned by the same interests. Access between the two roads was effected over the tracks of a separately owned and operated terminal road. The Interstate Commerce Commission, after investigation, issued an order[2] for recapture of excess earnings of the coal road[3] under Section 15a of the Transportation Act of 1920. In valuing the property of the O'Fallon Railway, the Commission used the method employed under the LaFollette Valuation Act of 1913. According to this "split inventory method," there were five steps: (1) the property was inventoried as of June 30, 1919 and the cost of reproduction on that date found by (2) applying 1914 unit prices to man-made property installed before 1914 and (3) applying these prices plus an index of price increases from 1914 to 1919 to property installed between these two dates; (4) property installed after 1919 was valued at the "recorded net cost of additions less retirements;" (5) land was appraised at current values of neighboring land at the date of valuation.

Was this the valuation method required by statute? Paragraph 4 of Section 15a directed the Commission in recapture cases to give "due consideration to all the elements of value recognized by the law of the land for rate-making purposes." So far as the written opinion discloses, the majority seized upon the phrase "law of the land," and after reciting a half-dozen cases from *Smyth* v. *Ames*[4] to the Indianapolis Water Company case,[5] concluded from

[1] *St. Louis & O'Fallon Railway Co. and Manufacturers' Railway Company v. U. S. et al.*, Nos. 131 and 132, May 20, 1929, 49 S. Ct. 384.

[2] *Excess Income of St. Louis & O'Fallon Railway Co.*, 124 I. C. C. 3 (1927).

[3] On account of physical separation the Commission ruled, and both the lower and Supreme Courts conceded, that the two roads were not under common control and management in the sense claimed by the owners who wished to offset the excess earnings of the coal road with the deficient earnings of the switching road.

[4] 169 U. S. 466 (1898).

[5] 272 U. S. 400 (1926).

the record that the Commission "carefully refrains from stating that any consideration whatever was given to present or reproduction costs in estimating the value of the carrier's property." Hence the decision was: "The Commission disregarded the approved rule and has thereby failed to discharge the definite duty imposed by Congress." Whereupon the majority added: "The weight to be accorded [to current costs or prices] . . . is not the matter before us."

An adequate summary of Mr. Justice Brandeis' dissent would unduly prolong this note. He accepted the majority contention that the litigation could be resolved by construction of the statute. But he fastened upon a different statutory phrase. Where the majority saw only "consideration to all the elements of value recognized by the law of the land," Mr. Justice Brandeis gave emphasis to "*due* consideration", and supported the Commission's exercise of discretion. His ten reasons for doing so can be consolidated substantially under four headings:

(1) *The Scope of the Commission's Powers.* The Commission, as a fact-finding body, has discretion in attaching weight to the evidence, and this weighting, even if reduced to zero, should not be disturbed by the Court in the absence of abuse of discretion. In declining to give effect to evidence of enhanced reproduction cost of property acquired before 1914, there was no abuse of discretion because this evidence for the recapture periods was scanty, imperfect and conjectural, and inferior to the Commission's special knowledge of the carrier's property, business and prospects.

(2) *The Intent of Congress.* Did the Commission abuse discretion in the sense of flouting the intent of Congress? The dissenting judges say "No." The statutory terms and their legislative history reveal an intent to allow the Commission to use its considered judgment in weighting the evidence. "The adoption by Congress of the increase in the return, as the means of compensating for the decreased purchasing power of the dollar [at the time of enactment in 1920], precluded the assumption that it intended that the valuation [rate-base] should reflect that lessened purchasing power. By explicitly choosing the former Congress implicitly rejected the latter." Moreover, by various other legislative mandates, Congress has imposed limitations on the rate-base which indicate that it does not desire to have rates pushed up to a point yielding the statutory return on the present cost of reproducing a railroad. Such limitations are the encouragement given to competing forms of transportation, which has made more effective the legal limitation embodied in the "long and short haul clause," and the requirement that value-finding be premised on efficient and economical management. Indeed, the Commission adhered to the "declared" purpose of Congress (maintenance of an adequate national railway transportation system) in deciding, on the basis of experience, that "to give effect to enhanced reproduction costs would defeat that purpose."

(3) *The Practical Merits of the Majority Commissioners' Attitude.* The statute requires a finding of rate-making value. But present value is not solely and necessarily proved by the fact that current cost of reproducing an identical plant is higher than original costs. Other considerations, taken into account by the Commission, are pertinent. The Commission rightly considered the legal and commercial limitations upon rates, in their influence on present value. Government encouragement of compet-

ing forms of transport, added to other legal limitations on rates, has so affected the volume of traffic that carriers have often voluntarily reduced rates since 1920, although earning less than the prescribed fair return. Nevertheless, the investment of capital in the railways has improved; their credit "is now excellent." And the carriers themselves have acquiesced in rates that would not yield the statutory return on the present cost of reproducing an identical plant.

At the present time, Mr. Justice Brandeis noted, functional depreciation is a most effective limitation upon the rate-base, a limitation composed of a mixture of legal, economic and technological elements. The Commission is justified in considering this factor because Congress specified valuation under "efficient and economical management." Progress in the art of transportation, changes in the volume or character of traffic, and similar causes have in many cases rendered obsolete much existing property which physically can still be used, though at higher operating cost than if up-to-date instruments were employed. This functional depreciation, or "lessening of service value," may make a railroad worth much less than the present cost of reproducing an identical plant. In short, the present cost, under modern conditions of construction, of producing a railroad designed to render the desired service (cost of reproducing a substitute plant) is much less than the enhanced cost of reproducing an identical plant most of which consists of antiquated, uneconomical instruments unsuited to modern service requirements.

"Upon such consideration the Commission may conclude that the railroad is so largely obsolete in construction and equipment as to render evidence of the reproduction of the identical plant of no probative force whatsoever.[6] . . . That this functional depreciation, arising through external changes, through competitive means of transportation, and through progress in the art of transportation, may, in respect to a particular railroad, have become so large as to more than counter-balance that increase in its actual value which would otherwise flow from the rise in the price level since 1914, seems clear."

The managerial excuse of insufficient revenues and capital to modernize the plant might have been "conclusive if prudent investment had been accepted as the measure of value."

(4) *Validity of Majority's Legal Precedents.* Differences in the competitive and market position of railroads, compared with local utilities, makes the substantive law of the Southwestern Bell case[7] inapplicable. Where a utility has exclusive control of its market and is not subject to commercial limitations on rates in the same degree as the railroads,

[6] At this point, Mr. Justice Brandeis says: "The duty so to deal with the evidence seems to flow necessarily from the rejection by the Court of prudent investment as the measure of value and the adoption, instead, of the actual value of the property at the time of the rate hearing as the governing rule of substantive law."

To the present writer this sentence, in addition to support of the substitute plant theory, seems to indicate a change in the Brandeis tactics. In the Southwestern Bell Telephone case, his dissent was broadly a frontal assault on the enhanced cost doctrine with affirmative support of the prudent investment theory of valuation. In this case, the attack is from the flank, or perhaps might be described as "boring from within." In substance he says: "Let us accede to the majority's insistence on considering present costs and rejecting prudent investment. But in applying reproduction cost we should not give the carriers the full benefit of nominal appreciation of the original property; instead we should subtract from this appreciation the full functional depreciation. In terms of valuation standards, the cost of reproducing a *substitute* plant under modern conditions is preferable to the cost of an *identical* plant, as a rate-base." However, the fact that the constitutionality of recapture, approved in the Dayton-Goose Creek case (263 U. S. 456 (1924) was not involved in the O'Fallon case suggests caution in pressing too far this point of a shift in tactics.

[7] 262 U. S. 276 (1923).

cost of reproducing the plant may be persuasive of actual value in a constitutional sense. The instant case, however, involved no constitutional question. Moreover, as a matter of statutory construction, the recapture sections explicitly require use of the rate-base. This disposes of the argument that even if the higher price level need not be considered in a rate-base, it should be given weight in a recapture base. Finally, the Commission's action was consistent with the adjective law declared in the telephone case, and with the principles approved in the Indianapolis and Bluefield[8] cases, while the valuation method "closely resembled" that approved by the Supreme Court in the Georgia Railway and Power Company case.[9]

This analysis by Mr. Justice Brandeis was concurred in by Justices Holmes and Stone, but the latter filed a separate opinion in which he considered the legal controversy concerning the evidential value of increased prices.

"Weight in the legal sense is evidently taken to be not that accorded by an informed judgment but imposed by some positive rule of law.... This court....has not said that such evidence [of present reproduction costs], when fairly considered, may not be outweighed by other considerations affecting value.... But if weight in the legal sense must be given to evidence of present construction costs, by the judgment now given we do not lay down any legal rule which will inform the Commission how much weight, short of its full effect, to the exclusion of all other considerations, is to be given to the evidence of synthetic costs of construction in valuing a railroad property."

The Opinion of the Majority

Apparently the touchstone of the case, as viewed by the majority, was consideration of current prices, that is, in 1921 to 1923, inclusive, the recapture years. The major part of the property was installed before 1914, to which only 1914 prices were applied. The net additions during the recapture years were negligible. The majority opinion seems to say: Unless man-made property installed before 1914 is put in the rate-base at 1923 prices, "no consideration" has been given to current prices. Yet it appears inconsistent then to disclaim responsibility for stating the weight to be accorded current prices.[10]

The opinion of the majority of the Commissioners, written by Commissioner Meyer, was treated with scant notice, while that of the minority Commissioner Hall was quoted at some length. Indeed, Mr. Justice McReynolds characterized as "long and argumentative" Commissioner Meyer's careful explanation of the practical necessity of a stable rate-base, as well as a stable

[8] 262 U. S. 679 (1923).

[9] 262 U. S. 625 (1923).

[10] Moreover, suppose this nine-mile railroad had been built largely between 1918 and 1920, would the owners be entitled to the decrement in value occurring in 1923? Perhaps Mr. Justice McReynolds had this possibility in mind when he wrote: "No doubt there are some, perhaps many, railroads the ultimate value of which should be placed far below the sum necessary for reproduction." If so, the query naturally arises: What will happen to the financial standing of such roads when a recapture order under these circumstances is made? That such eventualities influenced the majority of the Commission is evident from Commissioner Meyer's opinion.

Regarding this enhancement of prices between 1914 and 1923, it is difficult to avoid concluding from the written opinion that the majority of the court failed to perceive the implications of the distinction between unrealized and realized appreciation. Undoubtedly, as measured by the course even of "synthetic" unit prices, the nominal value of this railroad rose between 1914 and 1923. To say that this appreciated value is actual and realizable implies that there is a market for such properties and that the earning power of the property justifies the enhanced figure, or would warrant an alternative promoter in reproducing the road. This line of reasoning, however, leads into the well-worn circle of value depending on income. To say, then, that nominal appreciation should be treated as realized would destroy the possibility of any recapture.

and adequate return, for attracting a continuous inflow of capital. Why the majority of the Court chose to ignore such considerations is a mystery which their opinion does not unravel. One can only surmise that (1) they were not convinced by the majority Commissioners' reasoning (a rationalized view); (2) the Court misunderstood, through choice or ignorance, the central practical issue; (3) the Court was not prepared to penetrate the economics of the problem and was unwilling, as yet, to resolve the long-standing valuation dispute. Hence the underlying issue was avoided by the time-honored method of relying on technical and indefinite precedent. If this last interpretation is correct, the query arises: At what time will the Court emerge from its refuge? Must we wait until the railroads and water utilities have completely rejuvenated their properties at post-war prices; or will the more rapidly changing electric properties prompt a change of tune?

At least three immediate effects of the ruling are possible: (1) the expensive necessity of doing over some of the Commission's valuation work, which had been nearing completion; (2) stimulation of legislative action, either for more explicit definition of the "legal" rate-base or for investigation and later enlargement or alteration of all commission regulation;[11] (3) continuance of expensive litigation over rates, for the uncertainty of the law offers chances to the utilities for a profitable outcome and anyway the burden of this expense ordinarily falls on consumers wherever rates have not reached or surpassed the marginal value of service. From the standpoint of consumers, and of the long-time interests of investors, these are not, on the whole, desirable results.

The Minority Opinion

Inevitably Mr. Justice Brandeis may expect challenges and counter-attacks. In this note one can do no more than mention some of the outstanding areas of conflict.

Some persons are likely not to agree with his methods of finding the intent of Congress. Many of the statutes mentioned seem rather far removed from an intent to define what should be considered in a railroad's rate-base; they were directed to specific problems and only by inference bear upon the valuation problem. More directly in point, there is room for argument whether or not Congress intended to preclude a rate-base shifting according to price movements by increasing the allowable rate of return over the war guarantee.

Another line of argument might be directed against using the "hard times" of the railroads, so far as caused by government-induced competition, to deflate the rate-base used for recapture of a particular carrier's income. In this connection, it is rather curious that in an opinion of such scope the economic relationships of the strong-and-weak road and consolidation problems to valuation were not mentioned.

Most criticism, however, will probably be leveled against the related treatment of managerial efficiency, functional depreciation, and the substitute plant theory. Indeed, one such discussion other than periodical articles has already appeared.[12] This phase of the Brandeis opinion savors most strongly of his well-

[11] See Senate Resolution 80, 71st Congress, First Session, June 4, 1929; New York, Laws of 1929, c. 673; Massachusetts, Acts and Resolves, 1929, c. 55. These are conveniently reproduced in Bulletin No. 12, July 11, 1929, of *Public Utilities and Carriers' Service*, edited by David E. Lilienthal for Commerce Clearing House, Inc.

[12] Address by Cecil F. Elmes, of Chicago, before the Presidents' Conference Committee, Pittsburg–Chicago group, delivered at Toronto on June 24, 1929.

known views on prudent investment. The picture he draws of sleepy railroad management is vivid; yet even though substantially correct, how valid is his point, as a matter of policy in recapturing excess income, when the railroads have made rates neither under the prudent investment theory nor under the most inflated of reproduction cost theories? If the carriers had charged rates to yield the statutory return or more on the most enhanced rate-base, there would be more "bite" to his point that modernization should have been cared for. The substitute plant theory, which is joined with these matters, offers many complications which deserve a thorough airing.

Whatever may be the merits of these and other points, in both majority and minority opinions, there can be little question that the disposition of the case evidences an evasive judicial policy on valuation. How long will it be before we try another tack—a stable rate-base with a fluctuating rate of return intelligently linked to the financial requirements of the industry and the equities of classes of investors changing with shifting prices? This alternative presumably would require legislative action and a relaxing of the policy of judicial direction of the Commission. In that event, the O'Fallon case, paralleling in influence the Wabash case[13] which led to the establishment of the Commission, may mark a turning point in the history of railroad regulation.

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[13] *Wabash, St. Louis & Pacific Railway Co. v. Illinois*, 118 U. S. 557 (1886).

SOME COMMENTS ON "INCREMENTS IN SUBDIVIDED LAND VALUES IN TWENTY CHICAGO PROPERTIES"*

THE possible theoretical implications of such data as are presented in this study, as well as their obviously practical import, demand tbe utmost care in all handling and discussion of them. The additional observations offered below seem to the writer to be necessary for a clear understanding of the problems raised.

The chief comment concerns the method of measuring gains and losses[1]. The writers occasionally measure an increment or decrement in value as a percentage of the purchase price[2] but in the majority of cases as a *percentage of sales price*.[3] Both seem to be unfortunate. Obviously for many speculators in urban

**Editorial Note.* The article commented upon by Mr. Woodbury was prepared by Howard L. Shannon and H. Morton Bodfish and appeared in this *Journal* in February, 1929, pp. 29–47. In publishing these comments the editors follow their established policy of encouraging full and free discussion of subjects presented in the *Journal* when such discussion is based upon intelligently reasoned analysis. This policy applies to contributions by members of the Institute staff, as well as to contributions from outsiders. Page references are to this article.

[1] Throughout the article the buying and selling of vacant urban land is described as an investment. It seems to the writer that the correct word is speculation. Admittedly the line of separation is hard to draw; yet the extremes in each class are easily recognized and the distinction seems well worth making. On pages 7 and 8 of Lagerquist's *Investment Analysis* (Chicago: A. W. Shaw Co., 1924) the point is discussed and the most fundamental distinction between investment and speculation is said to be that "the investor buys to procure the income from the principal while the speculator buys to secure the profits that may accrue in a realized appreciation of the principal." This is in accord with common usage and is by no means a minor differentiation. In the case of vacant urban land the common misuse of these terms undoubtedly has encouraged unwary and inexperienced persons to make unwise purchases.

[2] Table VI, p. 39.

[3] Pp. 38, 39, 41, 44.

land the original purchase price represents a small part of the funds hazarded, since payments of taxes, assessments and interest foregone represent additional investments which yield no current income in the case of vacant land. This is clearly pointed out in the article. At the same time, use of the selling price seems equally undesirable. As far as the writer knows, it makes the percentage figures obtained wholly incomparable with those of similar ventures in other fields. Furthermore, it has the serious statistical weakness that the greater the gain the larger the base against which it is compared and therefore the smaller the percentage figure, but the greater the loss the smaller the base against which it is computed and therefore the larger the percentage figure.

The reasonable basis is neither of these but one not used at all in the article, namely, the purchase price plus all carrying charges (taxes, assessments, miscellaneous expenditures) compounded at a given rate. This figure represents fairly accurately the accumulated amount of funds which the owner has at stake when he sells and is the amount which he must realize in the sale in order not to lose. Therefore, a gain or loss reckoned from this amount is most logically presented as a percentage of it. Furthermore, gain or loss as a percentage of this amount gives a usable figure when the returns in land speculations are compared with other possible speculations and with investments of all kinds.

Table X[4] contains a rather significant error which should be corrected. The second and third classes in "Number of Years Held" have been incorrectly divided and because of their small size the result is greatly affected. The accompanying Table I gives the corrected figures with the addition of a figure of gain and loss as a percentage of purchase price plus carrying charges. The totals in Table I differ by a few dollars from those given in the original Table X but this is merely because they were computed from the preceding tables in that article in which fractions of a dollar were dropped, whereas Table I was taken from Mr. Shannon's thesis in which this was not done. The designation in original Table X, "Sales Value of Properties, 1925" is a mistake, for the figure is the aggregate value of all sales regardless of the date made.

These changes throw into some question the "definite conclusion" that "vacant outlying subdivided land is a good investment for short periods only"

[4] P. 44.

TABLE I. INCREMENTS AND DECREMENTS OF VALUE BY LENGTH OF PERIODS OF HOLDING.

	Number of Years Held				
	Less than 5	5 But Less Than 10	10 But Less Than 15	15 But Less Than 20	20 and More
Number of Properties	15	8	5	6	9
Aggregate Sales Value	$86,812	$59,733	$33,500	$42,405	$74,800
Purchase Price plus Carrying Charges	51,549	47,558	26,828	45,116	92,171
Increment or Decrement	35,252	12,171	6,660	−2,706	−17,376
Increment or Decrement as Percentage of Selling Price	40.6%	20.4%	19.9%	−6.4%	−23.2%
Increment or Decrement as Percentage of Purchase Price plus Carrying Charges	68.4%	25.6%	24.8%	−6.0%	−18.9%

(p. 46) *as far as these data are concerned.* This doubt is supported by Table II below which shows the number of gaining and losing speculations. Except in the very shortest holding, the number of net gains and losses is remarkably constant. This table is required because the amounts involved in different speculations varied so enormously that neglecting their lack of uniformity is misleading. For example, in the 10–15 year group the total increments were $10,835 and the total decrements $4,175, a net gain of $6,660. Yet of the $10,835 total increment, $7,216 was contributed by one transaction. Furthermore, the sales price of this one piece was $13,000 which was $4,500 more than the next largest transaction. In the class of holding for 20 years or more, the total increment was $11,145 and the total decrement $28,521, a net decrement of $17,376. The largest loss was $14,389, or over 50% of the total. Other less striking examples can be found. In other words, aggregates of small groups made up of non-uniform items are most dangerous figures from which to draw conclusions.

TABLE II. NUMBER OF GAINING AND LOSING TRANSACTIONS BY LENGTHS OF PERIODS OF HOLDING.

Length of Holding	Total	Gaining	Losing
Total	43	26	17
Less than 5 years	15	12	3
5 Years but less than 10 Years	8	4	4
10 Years but less than 15 Years	5	3	2
15 Years but less than 20 Years	6	2	4
20 Years or more	9	5	4

The piling up of carrying charges over a long period threatening to wipe out all possible gains in value is an indisputable fact. But, as far as the data of this project are concerned, the treatment given has apparently prevented a further search for factors determining gaining or losing speculations. The mistaken inferences from the original Table X seemed to make the length of holding the determining factor and systematic search for other influences was abandoned. The "very active real estate market conditions in 1925 in Chicago" are dismissed with a mere reference[5] and no mention is made of market conditions in other periods, except in footnote 21 on page 38.

Certainly one other hypothesis deserves testing, namely, that gains in real estate speculation like all other speculations, are dependent to a considerable degree on the condition of the market in which the sale is made. The "boom-depression" character of subdivision activity is unquestioned. In the Chicago area two major peaks have occurred, at the World's Fair period and again about 1925. The figures of lots recorded for sale in Cook County and in the Chicago Region, a fair index of market activity in vacant subdivision land, both show that the peak years in the former boom were 1888, 1889, and 1890 and in

[5] P. 46.

TABLE III. INCREMENTS AND DECREMENTS IN VALUES BY TIMES OF SALES.

Time of Sale	Number of Speculations	Aggregate Purchase Price Plus Carrying Costs	Increment or Decrement	Percent. of Gain or Loss	Length of Holding (in Years)
In "Boom" Years*	25	$188,801	$45,607	24.2	13.8
In Other Than "Boom" Years	18	74,421	—11,536	—15.5	10.8

*1888, 1889, 1890, 1924, 1925.

TABLE IV. NUMBER OF GAINING AND LOSING TRANSACTIONS BY TIMES OF SALES.

Length of Holdings	Number of Sales						
		In "Boom" Years			In Other Than "Boom" Years		
	Total	Total	Gaining	Losing	Total	Gaining	Losing
Total	43	25	17	8	18	9	9
Less than 5 Years	15	10	9	1	5	3	2
5 Years but less than 10	8	4	2	2	4	2	2
10 years but less than 15	5	1	1	0	4	2	2
15 Years but less than 20	6	3	0	3	3	2	1
20 Years and Longer	9	7	5	2	2	0	2

the latter 1924, 1925, and 1926. The study does not include 1926; therefore only the 5 years, 1888, 1889, 1890, 1924, and 1925 may be taken as "boom" years. Classifying all speculations as those concluded in "boom" years and those concluded in other than "boom" years gives the interesting result of Table III. With a fairly equal division between the two classes, the sales in the "boom" years averaged a substantial gain while sales in other than "boom" years showed a loss, *although the average length of holding of the latter class was less than in the former.*

Table IV shows the result of this classification regardless of size of holding. Slightly more than ⅔ of the speculations ending in "boom" years showed net gains, while in the slack years exactly ½ ended with net losses.

The data of this study warrant no conclusions on this hypothesis because of the insufficiency of the data mentioned. It seems quite clear, however, that in suggesting lines of comparison in more extensive studies, the condition of the real estate market at time of sale deserves at least as much attention as the length of holding. (A variant of this which was impossible to analyze with the data at hand is the result of *buying* in a boom and then selling in a slack year). If more complete studies bear out the hypothesis presented here, the theoretical implications of the carrying charges must be carefully examined. The question might well be put whether *all* of the interest charges based on an *inflated* purchase price are in any way connected with the income or rent of the lot in question.

This paper is in no sense an appraisal of the former article. Only points of difference have been mentioned on the supposition that the merits of the original article are sufficiently obvious to all readers.

COLEMAN WOODBURY.

BOOK REVIEWS

Splawn, Walter M. W. GOVERNMENT OWNERSHIP AND OPERATION OF RAILROADS. *New York: Macmillan Co., 1928. pp. xix, 468. $5.*

The first part of the book (259 pages) is a brief survey of the results of railway management and operation in different countries of the world. The type of ownership and a brief historical sketch of railroad development in each of the principal countries is presented in connection with selected statistics relative to mileage, investment, equipment, passenger and freight traffic data, operating results and average charges. These data are mostly for the year 1926. Money values are expressed in dollars and all other units are reduced to those with which we are familiar in this country. Sources are invariably indicated. Railroad maps of the several countries are reproduced but are of questionable value on account of their small size. A railroad map of Germany, for instance, restricted to half a page cannot be of any great service. The most such maps can show is the general location of railroads and the relationship of railroad mileage to area.

The second half of this treatise is devoted to a comparison of railroad operation and development in foreign countries with conditions in the United States and to an analysis of arguments for and against government ownership and operation. In making such contrasts it is recognized that a comparison of costs and rates and operating statistics alone is not conclusive. Fundamental operating and traffic conditions differ widely. In Belgium, for example, the cost of construction per mile of line is $272,729, in the United States the investment in road and equipment is less than $100,000 per mile; the length of haul per ton of freight in Belgium is about 63 miles; in the United States it averages over 300 miles; Belgium's railroads collected an average rate of 3.86 cents per ton-mile; the average ton-mile revenues in the United States were 1.095 cents for 1927. In discussing freight revenues or ton-mile rates no mention is made of the fact that in most, if not all, European countries the charges collected by the railroads for transporting less-than-carload freight also cover collection and delivery service as well as rail service. All this would indicate that comparisons of bare and unexplained unit statistics are by no means conclusive. The author appears to appreciate this fact and does not attribute the lower ton-mile charges of American railroads solely to the greater efficiency and economy caused by private ownership as certain private ownership proponents have so often done in the past.

In his studies the author arrives at the general conclusion that those foreign countries organized as autocratic governments are more successful in operating their railroads as government enterprises than the countries in which the citizens exercise more direct control. Under the Dawes plan the German Government has relinquished the operation of its railway system by a government bureau and has organized the German State Railway Company, as a trustee for the State, to operate the 33,142 miles of railroad, constituting the largest system under a single management in the world. The management is vested in a Board of Directors and a Board of Managers, while ownership still remains lodged in the State. Reports not available at the time the data for this book were gathered show that

this Company has been able to reduce the number of employees 30%, although freight and passenger business has not increased appreciably; the old, four-class passenger system has been changed to a two-class system; fewer locomotives are in use; freight cars of larger capacity are used; longer freight trains are operated; and great economies are made in costs of repairing equipment. A marked operating efficiency is noted. Other European countries which find it difficult to balance their railroad budget may have to adopt the policy followed by Germany in this respect.

The experience of the United States Government in operating the railroads during the war period is accorded a whole chapter. This experience, it appears in the opinion of the author, is an argument against government ownership and operation of railroads in the United States. Number of employees increased greatly and the efficiency of operation was lowered, he says. This statement is unfortunately true but the conclusion he derives from these facts that "this great increase in the number of employees far beyond any increase in volume of business constitutes a standing indictment against government operation of railroads" is not well founded. He overlooks the fact that there was a similar reduction of labor output in private industry. The shortage of labor, because of war conditions, was universal and that was inevitably accompanied by a reduction in efficiency.

That the railroad administration should have advanced freight rates so as to balance more nearly the budget is another of the author's criticisms of our experiment with government operation of railroads. Many share this point of view. Others, including Walker D. Hines, formerly director-general of railways, believe that this burden would have been greater, if rates had been materially raised during the period of government operation, than it actually was through the failure of the Railroad Administration to bring operating revenues up to the level of operating expenses plus fixed charges and thus shift the deficit to the Federal Treasury.

The reasons ordinarily advanced for government ownership of railroads as a permanent policy for the United States are examined and analyzed. The present system of regulation is strongly upheld. Mr. Splawn believes that before private ownership and operation is abandoned in this country it should be clearly proven that such a change would result in "better service for the same cost or in as good service for less cost." The arguments generally advanced along this line by government ownership advocates are by no means convincing. Some argue that the railroads exert a pernicious influence on the politics of the country. In days gone by that was more true than it is at the present time under a more extended system of federal and state regulation. Placing railroads under government management would put them more into politics than they now are; conditions of employment, rates, new construction and extension of lines would be in the hands of political parties and politicians. If a policy of public ownership and operation of railroads is ever to be adopted it should await "gradual development under the slow processes of evolution."

The bibliography is especially valuable because it comprises a list of documents and reports covering railway financial statistics of foreign countries.

HENRY R. TRUMBOWER.

BOOK NOTICES

National Association of Railroad and Utilities Commissioners. PROCEEDINGS, FORTIETH ANNUAL CONVENTION, 1928. (*New York: 1929*). *pp. xii, 548.* $5.

Omitting the informal portions, the proceedings of a convention are often a good index of what is uppermost in the minds of members of an association, at least, of those members who at the moment direct its program. The "theme of this convention," said President Wells (p. 200), is "the preservation of state's rights." The antipathy of state officials to centralization of regulatory functions in federal agencies crops out in several places—control of railroads, motor carriers, air carriers, and electric utilities. The experiences of the state commissioners in the cooperative arrangements with the Interstate Commerce Commission lead these state officials to oppose thorough-going Federal regulation of motor carriers and Federal investigation of electric utility holding companies, and to fear Federal Encroachments in controlling electric utilities. The dangers of too much centralization are very real, yet utility corporations cannot be rigidly kept within state boundaries, and there is danger lest the increasingly serious problems of divided jurisdiction reduce or destroy the effectiveness of our whole scheme of regulation. Here is a basic problem of government the solution of which requires statesmanship of a high order, but constructive suggestions to this end were not noted very frequently in these proceedings.

Aside from these problems in railroad regulation the Commissioners seemed most occupied with the difficulties attending motor carrier regulation, control and investigation of electric utility holding companies, and supervision of airplane carriers. The bulk of the Association members appeared to support the Parker bill in the drafting of which the Committee on Motor Vehicle Legislation cooperated. In the discussion of the Committee report and of addresses by three representatives of motor carrier interests, the issue of preserving state jurisdiction was uppermost. The report of the Committee on Capitalization and Intercorporate Relations, which recommended greater control over holding companies, was reviewed in a recent issue of this *Journal* The discussion following this report was not as spirited as that following Mr. Erickson's address at the preceding convention, but some of the difficulties of the Commissioners were recounted. That control over airplane carriers has been obtained in some states and is being urged in others was brought out in one of the later sessions.

Of several able and informative reports to the Convention perhaps the most significant was that of the Special Committee on Generation and Distribution of Electric Power, headed by Commissioner Kanneberg of Wisconsin. It is a study of unit costs to show the relative advantages of large and small-scale operations in both steam and water power systems. From lack of comparable data, only Wisconsin properties were taken. The report "indicates" that independent systems with an output of 8 to 10,000,000 kw.h. a year can compete in operating economies with the huge central stations of super-power systems. Although this report may not be free from imperfections when closely studied, it exemplifies a very worth-while function of this Association which should be encouraged and extended in the interest of scientific administrative practice.

E. W. MOREHOUSE.

OTHER BOOKS RECEIVED

Bernhardt, Joshua. THE RAILROAD LABOR BOARD: ITS HISTORY, ACTIVITIES AND ORGANIZATION. *Baltimore: Johns Hopkins Press, 1923. pp. x, 81.* $1.

Bingham, Walter Van Dyke and Freyd, Max. PROCEDURES IN EMPLOYMENT PSYCHOLOGY. *Chicago: A. W. Shaw Co., 1926. pp. xi, 262.* $5.

Bye, Raymond T. and Hewett, William W. APPLIED ECONOMICS. *New York: Alfred A. Knopf, Inc., 1928. pp. vi, 642.* $3.75.

Carver, Thomas Nixon. THIS ECONOMIC WORLD: AND HOW IT MAY BE IMPROVED. *Chicago: A. W. Shaw Co., 1928. pp. vi, 415.* $4.

Copeland, D. B. (Editor). AUSTRALIAN WOOL ANNUAL. *Melbourne: Reviews Proprietary Limited. Vol. 1927-1928, pp. 120.* 17/6.

Donaldson, John. INTERNATIONAL ECONOMIC RELATIONS: A TREATISE ON WORLD ECONOMY AND WORLD POLITICS.

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